F.No 7-08/2004 RD. BY AIR MAIL (By AIR Mail)



M/s Aero Design ltd., 2013-39th Avenue NE, Calgary, Alberta, Canada T2E 6R7



भारत सरकार

नागर विमानन विभाग

GOVERNMENT OF INDIA CIVIL AVIATION DEPARTMENT OFFICE OF THE

DIRECTOR GENERAL OF CIVIL AVIATION

AIRCRAFT ENGINEERING DIRECTORATE OPP. SAFDARJUNG AIRPORT, NEW DELHI - 110 003

Tele: 91-011-24622500 Ext.: 268

महानिदेशक नागर विमानन का कार्यालय

सफदरजंग एयरपोर्ट के सामने

नई दिल्ली - ११० ००३

e-mail:

Mumbai - 400054

suresh.dgca@nic.in

Reference: No.:

संख्या :

7-8/2004-RD (Part-I)

Dated:

दिनांक :

18.03.2013

M/s Global Vectra Helicorp Ltd. Hangar No. C-He/Hf, Airport Authority of India, Civil Aerodrome, Juhu,

Sub: Acceptance of FAA STC No's SR02680NY & SR02770NY for installation of Cargo Basket & Fixed Cabin Step respectively on Eurocopter AS350B3 operated by M/s Global Vectra Helicorp Limited, Mumbai

Ref: 1) M/s global Vectra Helicorp Ltd. letter no. GVHL/DDG-MUM/QD/2013/23 dated 19 Feb2013

- 2) Dte of Airworthiness, DGCA Hqrs. Note F.No. 4-101/2009-AI (1) dated 04 Mar 2013
- 3) Aero Design Ltd. Letter no. Quote 4485 dated 15th Feb 2013 to M/s Global Vectra Helicorp Ltd.

Sir,

Reference may please be made to the letters under references 1, 2 & 3 on the subject matter.

The submitted documents with regard to subject matter have been examined and it is observed that the following documents/clarifications have not been submitted.

- (i) The effect of design changes specified in STC's on operational capability at high altitude >10,000 ft.
- (ii) The effect of design changes specified in STC's at high ambient temperature up to +50 deg C at sea level conditions to ensure that affected instrument/ equipment/aircraft system would continue to function up to maximum ambient temperature of +50 deg C.
- (iii) Service & reliability/safety records pertaining to modification/change of design specified in STC's.

Therefore, you are requested to advise the STC holder to submit the above mentioned documents/clarifications to this office at the earliest.

Yours faithfully,

(SK Singh)

Deputy Director (AE)

for Director General of Civil Aviation

Cc: 1. DAW, DGCA Hqrs

- 2. O/o DDG (WR), Mumbai
- 3. M/s Aero Design Ltd, 2013-39th Avenue NE, Calgary, Alberta, Canada, T2E 6R7



Department of Transport

Supplemental Type Certificate

This approval is issued to:

Number: SH08-16

Aero Design Ltd.

Issue No.: 3

2013 39th Avenue North East

Approval Date: April 11, 2008

Calgary, Alberta

Issue Date: October 28, 2010

Canada T2E 6R7

Responsible Office:

Prairie and Northern

Aircraft/Engine Type or Model:

EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3,

AS 350 BA, AS 350 D, AS 350 D1,

EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS

355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent:

EUROCOPTER AS 350: H-83

EUROCOPTER FRANCE AS 355: H-87

Description of Type Design Change:

Installation of External Attachment Provisions and Cargo

Basket.

Installation/Operating Data,
Required Equipment and Limitations:

Configuration A – External Attachment Provisions Only:

Installation of External Attachment Provisions to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL786-1, Revision 3, dated 16 June 2010, or later approved revision.

External Attachment Provisions installed in accordance with DCL786-1 may remain installed if the basket installation is removed.

Configuration B - External Cargo Basket (Short Basket):

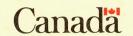
Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration B, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL776-1, Revision 3, dated 16 June 2010, or later approved revision.

...See Continuation Sheet



Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

D.S. Austen For Minister of Transport



DESIGN APPROVAL DOCUMENT TRANSFER

Transfer of this design approval document requires the prior approval of the Minister and the reissue of this document in the name of the transferee.

The reissue of this design approval document in the name of the transferee will be contingent on the holder and the transferee fulfilling their responsibilities as described in section 521.357 of the *Canadian Aviation Regulations*.

TRANSFERT DU DOCUMENT D'APPROBATION DE LA CONCEPTION

L'approbation préalable du ministre est exigée en vue d'un transfert de ce document d'approbation de la conception et la réédition de ce document au nom du cessionnaire.

La réédition de ce document d'approbation de la conception au nom du cessionnaire est conditionnelle à la satisfaction des exigences et des responsabilités, du titulaire et du cessionnaire, décrites dans l'article 521.357 du Règlement de l'aviation canadien.

I have reviewed the above requirements and recognize that until the above requirements are met the certificate and all its privileges and obligations will not be transferred.

J'ai examiné les conditions susmentionnées et je comprends que le transfert du certificat et des privilèges et des obligations s'y rattachant ne sera pas effectué tant que ces conditions n'auront pas été respectées.

Signature of holder/signature du titulaire

date/date





Number: SH08-16 Issue 3

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration C – External Cargo Basket (Short Basket – Alternate):

-Removed-

Configuration D - External Cargo Basket (Medium Basket):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration D, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL764-1, Revision 3, dated 16 June 2010, or later approved revision.

Configuration E - External Cargo Basket (Long Basket)

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration E, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL784-1, Revision 3, dated 16 June 2010, or later approved revision.

Configuration F - External Cargo Basket (Long Basket - Alternate)

-Removed-

Cargo Basket Modifications:

Modifications to the Cargo Basket configurations are eligible in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL704, Revision 6, dated 29 April 2010, or later approved revision. Eligibility limitations are noted on the drawings.

Data Pertinent to All Configurations:

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS764.91, Revision 2, dated 16 June 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA764.90, Revision 3, dated 12 April 2010, or later accepted revision is required with this installation.

Basis of certification remains as defined in the applicable Type Certificate Data Sheets.

End -

AS350 & AS355 SERIES HELICOPTERS

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT for the INSTALLATION of the AERO DESIGN

QUICK RELEASE CARGO BASKET

CARGO BASKET MODELS: 76401, 77601, 78401

TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory. Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Cargo Basket Installation and/or Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.



Revision 2 16 June 2010 OCT 2 8 2010

Page 1

TRANSPORT CANADA APPROVED

Table of Contents

1	Limitations	3
П	Normal Procedures	3
Ш	Emergency Procedures	3
IV	Performance	3
٧	Weight and Balance	4
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Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	Ву
0	25 Feb, 2008	None		
1	29 Jan, 2010	All		
2	16 June 2010	1, 2, 4-12		
				1

I LIMITATIONS

- 1. The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Models 764 and 784 is 250 lb. (113 kg). The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Model 776 is 300 lb. (135.7 kg).
- 2. Only one basket may be installed on the helicopter, on the right or left side.
- Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
- 4. V_{NE} is unchanged from the basic rotorcraft.
- 5. AS355NP only: For Category A operations, the basket must be removed. Mounting provisions may be left in place.

II NORMAL PROCEDURES

- 1. Pre-flight inspections:
 - Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - Ensure the basket is locked in postion on the beams. Pull up on the forward end of the basket to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

- 1. Cruise performance and range will be reduced by approximately 8 percent with the Cargo Basket Installed.
- 2. AEO climb performance will be reduced by up to 150 fpm.

Revision 1 29 January 2010 OCT 2 8 2010 Page 3 TRANSPORT CANADA APPROVED

V WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 76401, 77601, and 78401. Each model has multiple configurations. Refer to the weight and balance information applicable to model and configuration installed.

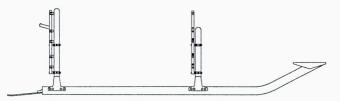
Longitudinal and Lateral moment arms for Cargo are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

1. Configuration 786 – Mounting Provisions Only

The following weight and balance is for the mounting provisions installed in accordance with drawing 78602 or 78603 as applicable.



Standard

Cturidard							
P/N	Description	Weight	Longi	tudinal	Late	eral	
			arm	moment	arm	moment	
		lb	in	in-lb	in	in-lb	
78602-01-01	Low Right Hand Provisions	6.4	135.6	866.0	37.2	238.0	
78602-02-01	High Right Hand Provisions	6.4	135.6	866.0	36.5	233.8	
78603-01-01	Right Hand Eurocopter Pod Compatible Provisions	6.8	135.4	921.0	38.8	263.6	
78602-01-02	Low Left Hand Provisions	6.4	135.6	866.0	-37.2	-238.0	
78602-02-02	High Left Hand Provisions	6.4	135.6	866.0	-36.5	-233.8	
78603-01-02	Left Hand Eurocopter Pod Compatible Provisions	6.8	135.4	921.0	-38.8	-263.6	

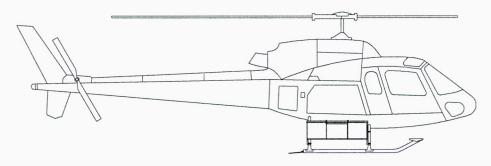
Metric

P/N	Description	Weight	Longi	tudinal	Lat	eral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78602-01-01	Low Right Hand Provisions	2.9	3443.0	9970.6	944.6	2735.4
78602-02-01	High Right Hand Provisions	2.9	3443.0	9970.6	928.1	2687.6
78603-01-01	Right Hand Eurocopter Pod Compatible Provisions	3.1	3440.1	10584.8	984.6	3029.6
78602-01-02	Low Left Hand Provisions	2.9	3443.0	9970.6	-944.6	-2735.4
78602-02-02	High Left Hand Provisions	2.9	3443.0	9970.6	-928.1	-2687.6
78603-01-02	Left Hand Eurocopter Pod Compatible Provisions	3.1	3440.1	10584.8	-984.6	-3029.6

Revision 2 16 June 2010

2. Configuration 776 (Short Basket)

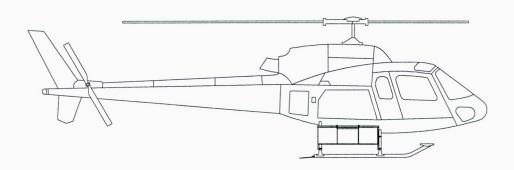
The following weight and balance is for cargo baskets installed in accordance with drawing 77601.



Standard

Otandard							
P/N	Description	Weight	Longit	tudinal	La	teral	
			arm	moment	arm	moment	
		lb	in	in-lb	in	in-lb	
77601-01-01	Low Right Hand Installation	41.4	135.9	5627.5	45.9	1900.5	
77601-02-01	High Right Hand Installation	41.4	135.9	5627.5	45.1	1868.3	
77601-03-01	Eurocopter Pod Compatible Right Hand Installation	41.8	135.9	5681.0	47.8	1996.1	
	Maximum Cargo (RH)	300.0	135.9	40770.0	*	*	
77601-01-02	Low Left Hand Installation	41.4	135.9	5627.5	-45.9	-1900.5	
77601-02-02	High Left Hand Installation	41.4	135.9	5627.5	-45.1	-1868.3	
77601-03-02	Eurocopter Pod Compatible Left Hand Installation	41.8	135.9	5681.0	-47.8	-1996.1	
	Maximum Cargo (LH)	300.0	135.9	40770.0	*	*	

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.



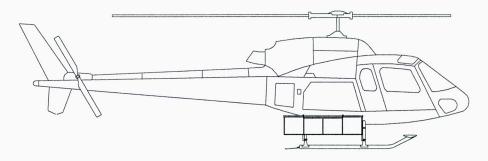
Metric

Michio								
P/N	Description	Weight	Longitudinal		gitudinal Lateral			
			arm	moment	arm	moment		
		kg	mm	mm-kg	mm	mm-kg		
77601-01-01	Low Right Hand Installation	18.7	3452.6	5627.5	1166.0	21842.9		
77601-02-01	High Right Hand Installation	18.7	3452.6	5627.5	1146.3	21473.2		
77601-03-01	Eurocopter Pod Compatible Right Hand Installation	18.9	3452.6	5681.0	1212.9	22941.6		
	Maximum Cargo (RH)	135.7	3452.6	468768.7	*	*		
77601-01-02	Low Left Hand Installation	18.7	3452.6	5627.5	-1166.0	-21842.9		
77601-02-02	High Left Hand Installation	18.7	3452.6	5627.5	-1146.3	-21473.2		
77601-03-02	Eurocopter Pod Compatible Left Hand Installation	18.9	3452.6	5681.0	-1212.9	-22941.6		
	Maximum Cargo (LH)	135.7	3452.6	468768.7	*	*		

 $^{^{\}star}\text{Lateral}$ arm is same as basket configuration. Lateral moment is calculated with lateral arm.

3. Configuration 764 (Medium Basket)

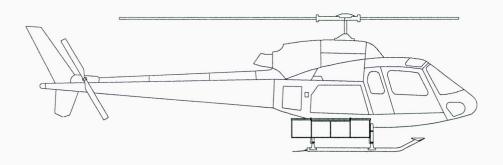
The following weight and balance is for cargo baskets installed in accordance with drawing 76401.



Standard

P/N Description Weight lb Longitudinal arm moment lb Lateral moment arm moment in-lb Lateral moment arm moment in-lb 76401-01-01 Low Right Hand Installation 51.4 144.0 7401.5 46.7 2402.5 76401-02-01 High Right Hand Installation 51.4 144.0 7401.5 46.0 2362.3 76401-03-01 Eurocopter Pod Compatible Right Hand Installation 51.8 143.9 7455.0 48.6 2518.1 76401-01-02 Low Left Hand Installation 51.4 144.0 7401.5 -46.7 -2402.5 76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.7 -2402.5 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1 Maximum Cargo (LH) 250.0 144.0 3600.0 * * *	Standard							
Ib in in-lb in in in-lb in in in-lb in in-lb in in in in in in-lb in in in in in in in i	P/N	Description	Weight	Longit	udinal	La	teral	
76401-01-01 Low Right Hand Installation 51.4 144.0 7401.5 46.7 2402.5 76401-02-01 High Right Hand Installation 51.4 144.0 7401.5 46.0 2362.3 76401-03-01 Eurocopter Pod Compatible Right Hand Installation 51.8 143.9 7455.0 48.6 2518.1 Maximum Cargo (RH) 250.0 144.0 36000.0 * * 76401-01-02 Low Left Hand Installation 51.4 144.0 7401.5 -46.7 -2402.5 76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1				arm	moment	arm	moment	
76401-02-01 High Right Hand Installation 51.4 144.0 7401.5 46.0 2362.3 76401-03-01 Eurocopter Pod Compatible Right Hand Installation 51.8 143.9 7455.0 48.6 2518.1 Maximum Cargo (RH) 250.0 144.0 36000.0 * * 76401-01-02 Low Left Hand Installation 51.4 144.0 7401.5 -46.7 -2402.5 76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1			lb	in	in-lb	in	in-lb	
Total Eurocopter Pod Compatible Right Hand Installation 51.8 143.9 7455.0 48.6 2518.1 Maximum Cargo (RH) 250.0 144.0 36000.0 * * 76401-01-02 Low Left Hand Installation 51.4 144.0 7401.5 -46.7 -2402.5 76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1	76401-01-01	Low Right Hand Installation	51.4	144.0	7401.5	46.7	2402.5	
Right Hand Installation 51.8 143.9 7455.0 48.6 2518.1 Maximum Cargo (RH) 250.0 144.0 36000.0 * * 76401-01-02 Low Left Hand Installation 51.4 144.0 7401.5 -46.7 -2402.5 76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1	76401-02-01	High Right Hand Installation	51.4	144.0	7401.5	46.0	2362.3	
76401-01-02 Low Left Hand Installation 51.4 144.0 7401.5 -46.7 -2402.5 76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1	76401-03-01		51.8	143.9	7455.0	48.6	2518.1	
76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1		Maximum Cargo (RH)	250.0	144.0	36000.0	*	*	
76401-02-02 High Left Hand Installation 51.4 144.0 7401.5 -46.0 -2362.3 76401-03-02 Eurocopter Pod Compatible Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1								
76401-03-02 Eurocopter Pod Compatible	76401-01-02	Low Left Hand Installation	51.4	144.0	7401.5	-46.7	-2402.5	
Left Hand Installation 51.8 143.9 7455.0 -48.6 -2518.1	76401-02-02	High Left Hand Installation	51.4	144.0	7401.5	-46.0	-2362.3	
Maximum Cargo (LH) 250.0 144.0 36000.0 * *	76401-03-02		51.8	143.9	7455.0	-48.6	-2518.1	
		Maximum Cargo (LH)	250.0	144.0	36000.0	*	*	

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.



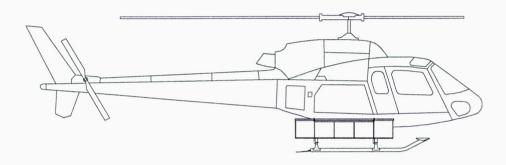
Metric

P/N	Description	Weight	Longitudinal		Lateral	
	•		arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76401-01-01	Low Right Hand Installation	23.3	3657.6	85067.2	1187.2	27612.4
76401-02-01	High Right Hand Installation	23.3	3657.6	85067.2	1167.4	27150.9
76401-03-01	Eurocopter Pod Compatible Right Hand Installation	23.4	3655.5	85681.4	1234.7	28941.1
	Maximum Cargo (RH)	113.1	3657.6	413674.6	*	*
76401-01-02	Low Left Hand Installation	23.3	3657.6	85067.2	-1187.2	-27612.4
76401-02-02	High Left Hand Installation	23.3	3657.6	85067.2	-1167.4	-27150.9
76401-03-02	Eurocopter Pod Compatible Left Hand Installation	23.4	3655.5	85681.4	-1234.7	-28941.1
	Maximum Cargo (LH)	113.1	3657.6	413674.6	*	*

 $^{^{\}star}\text{Lateral}$ arm is same as basket configuration. Lateral moment is calculated with lateral arm.

4. Configuration 784 (Long Basket).

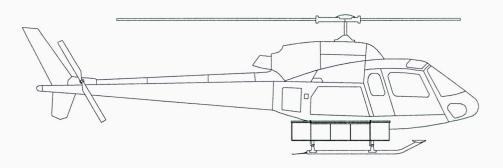
The following weight and balance is for cargo baskets installed in accordance with drawing 78401.



Standard

P/N	Description	Weight	Longit	udinal	La	teral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78401-01-01	Low Right Hand Installation	63.9	136.0	8687.5	47.4	3026.8
78401-02-01	High Right Hand Installation	63.9	136.0	8687.5	46.6	2976.6
78401-03-01	Eurocopter Pod Compatible Right Hand Installation	64.3	135.9	8741.0	49.3	3167.4
	Maximum Cargo (RH)	250.0	136.0	34000.0	*	*
78401-01-02	Low Left Hand Installation	63.9	136.0	7401.5	-47.4	-3026.8
78401-02-02	High Left Hand Installation	63.9	136.0	7401.5	-46.6	-2976.6
78401-03-02	Eurocopter Pod Compatible Left Hand Installation	64.3	135.9	7455.0	-49.3	-3167.4
	Maximum Cargo (LH)	250.0	136.0	34000.0	*	*

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.



Metric

motito —							
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
78401-01-01	Low Right Hand Installation	28.9	3453.3	99847.5	1203.1	34787.1	
78401-02-01	High Right Hand Installation	28.9	3453.3	99847.5	1183.2	34210.6	
78401-03-01	Eurocopter Pod Compatible Right Hand Installation	29.1	3452.9	100461.7	1251.2	36403.3	
	Maximum Cargo (RH)	113.1	3453.3	390568.2	*	*	
78401-01-02	Low Left Hand Installation	28.9	3453.3	99847.5	-1203.1	-34787.1	
78401-02-02	High Left Hand Installation	28.9	3453.3	99847.5	-1183.2	-34210.6	
78401-03-02	Eurocopter Pod Compatible Left Hand Installation	29.1	3452.9	100461.7	-1251.2	-36403.3	
	Maximum Cargo (LH)	113.1	3453.3	390568.2	*	*	

 $^{^{\}star}\text{Lateral}$ arm is same as basket configuration. Lateral moment is calculated with lateral arm.

VI INSTALLATION / REMOVAL INSTRUCTIONS

Cargo Baskets

The beams are installed in accordance with drawing 78602 or 78603 as applicable. The basket is installed in accordance with drawing 76401, 77601 or 78401, as applicable. Removal of the basket leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket and which weight and balance amendment is in effect is required when basket is installed or removed.

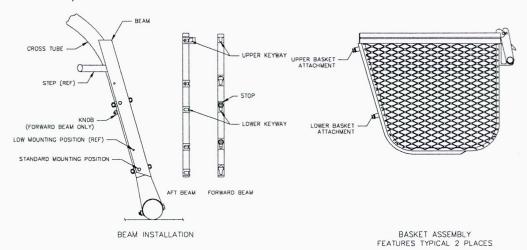


Figure 1 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical for low and high beam installations)

- 5. Installation Refer to Figure 1 and Figure 2.
 - a) Set basket upper aft basket attachment into upper keyway in aft beam. Forward end of basket may rest on floor.
 - Lift basket from forward end, slide lower aft attachment into keyway on aft beam.
 - c) At forward attachment hoop, lift basket until lower attachment fitting hits stop.
 - d) Push fitting into keyway and slide basket down until locked.

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- 2. Removal Refer to Figure 1 and Figure 2.
 - a) Pull knob at bottom end of forward beam and lift basket until attachment fittings are free of keyways.
 - b) Rotate basket up until lower aft attachment fitting is free of keyway. Rest forward end of basket on floor.
 - c) Slide basket forward and raise basket until upper aft attachment fitting is free of keyway.

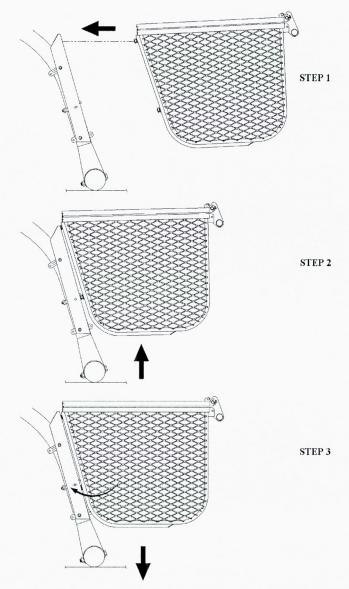


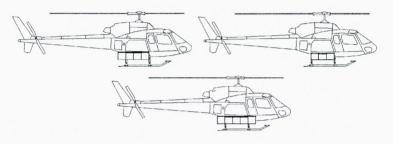
Figure 2 – Basket Attachment Steps (Installation instructions typical for all configurations).

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 764.90

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE CARGO BASKET

MODELS: 764, 776 AND 784



TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Cargo Basket installed in accordance with AERO Design Ltd. Document Control Lists:

- DCL764-1 (for Installation 76401), Revision 3,
- DCL776-1 (for Installation 77601), Revision 3,
- DCL784-1 (for Installation 78401), Revision 3,
- DCL786-1 (for mounting provision), Revision 3, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 3 Date: 12 April, 2010

<u>AERO Design Ltd.</u> Engineering Consultants

AERO Design Ltd.

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	Ву
0	25 February 2008		Original Issue
1	24 June, 2009		
2	22 December 2009		
3	12 April 2010		

LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue)	25 February, 2008
	Revision 1	24 June, 2009
	Revision 2	22 December, 2009
	Revision 3	12 April, 2010

List of Effective Pages

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Cargo Basket as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Cargo Basket. Requests for a copy may be made in writing to:

AERO Design Ltd. 2013 39th Avenue N.E. Calgary, Alberta T2E 6R7

Fax: 403-250-8333

Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

0-5 GENERAL DESCRIPTION

The cargo basket installation is a metal mesh basket installed to the side of the helicopter on beams attached to the landing gear cross tubes. The quick release basket allows for the installation and removal of the basket without tools, leaving the mounting beams in place.

The basket itself is made of a steel welded tubing structure, and lined with expanded steel mesh. The basket has a hinged lid with a self-locking handle.

The beams consist of a steel tube bolted to a clamp on the cross-tube. The quick release mechanism is built into the steel tube.

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Cargo Basket.

ICA 764.90 AERO Design Ltd.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Cargo Basket.

Daily Inspection

- 1. Inspection Area: Basket
 - a) Inspect the basket attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.
 - b) Inspect latching of the lid for correct operation. If basket is bent inward the lid will close but may not latch.

300 Hour or Annual Inspection

- 1. Inspection Area: Basket
 - a) Visually inspect tube-to-tube welds and mesh-to-tube welds for cracks, corrosion or other damage.
 - b) Visually inspect basket mesh for damage.
- 2. Inspection Area: Beams

With the basket removed:

- a) Visually inspect beams and clamps attaching basket to the helicopter for cracks, corrosion or other damage.
- b) Visually inspect lugs attaching the basket to the beams for security and damage.
- c) Visually inspect bolts attaching beams to clamps and clamps to cross tubes for condition and security.
- d) Visually inspect peg step on aft beam for crack corrosion or other damage. Inspect grip surface on top of peg for condition.

Special Inspections

- 1. Following a hard landing inspect the Quick Release Cargo Basket installation in accordance with the 300 hour or annual inspection listed above.
- 2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

05-00-00 Revision 3

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Basket

- a) Repair Basket in accordance with AC43.13-1B, Chapter 4, Section 5, Welding, as required.
- b) Basket is fabricated from the following materials:

Attachment Hoops:

1" square steel tube and/or ½" square steel tube

Lid and Rim:

3/4" square steel tube

Frames:

1/2" square steel tube

Mesh:

3/4" 16 ga. (0.040") expanded steel mesh

c) Touch up with polyurethane paint as required following repairs.

2. Steel Beams

DO NOT REPAIR DAMAGE TO BEAMS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on any face up to 0.015" deep and 0.125" wide may be dressed out to a smooth contour.
- b) Critical keyway dimensions are shown in Figure 5.1. Attempt to insert 15/32 drill shank into bottom end of keyway. If drill can be inserted, slot is worn beyond limit.

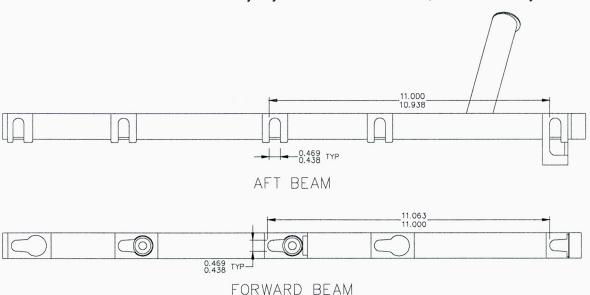


Figure 5.1 - Critical Keyway Dimensions

- c) Touch up with polyurethane paint as required following repairs.
- d) Aft beam only: Grip surface on top of peg step has 1" wide 3M Safetywalk grip tape, or equivalent, on the top surface. Alternatively, it may be painted with Randolph X1567 WingWalk grip paint or equivalent.

3. Aluminum Clamps

DO NOT REPAIR DAMAGE TO CLAMPS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on the top or bottom surface up to 0.060" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 5.2.
- b) Nicks and/or gouges on the outer edge up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 5.2.
- c) Any cracking on any surface is unacceptable.
- d) Touch up with polyurethane paint as required following repairs.

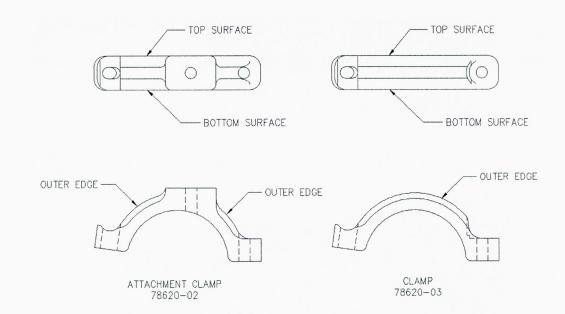


Figure 5.2 – Aluminum Clamps (78620-01 shown, 78621-XX similar)

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

1/4-28 insert: 3591-4CN375

5-3 PROTECTIVE TREATMENT INFORMATION

1. Beams

The steel tubes are supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

Aft beam only: the peg step has a 1" wide strip of 3M SafetyWalk grip tape applied to the top surface. If the grip tape is damaged it may be replaced with equivalent grip tape or may be painted with Randolph X1567 WingWalk grip paint.

2. Clamps

The aluminum clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

3. Cargo Basket

The cargo basket is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

CHAPTER 11 – MARKINGS AND PLACARDS

The following markings and placards are used with the Quick Release Cargo Basket Installation in the locations noted:

a) Located on basket lid:

O QUICK RELEASE BASKET O EUROCOPTER AS350 & AS355 SERIES S/N 77501-01

MAXIMUM PERMISSIBLE LOAD 300 LBS/136 KG

AERO DESIGN LTD.
CALGARY, ALBERTA, CANADA O 403-250-6027

PLACARD FOR 77601 BASKET INSTALLATION

O QUICK RELEASE BASKET O EUROCOPTER AS350 & AS355 SERIES S/N 76401-01 MAXIMUM PERMISSIBLE LOAD 250 LBS/113 KG
AERO DESIGN LTD.
O CALGARY, ALBERTA, CANADA 403-250-B027

PLACARD FOR 76401 BASKET INSTALLATION

O QUICK RELEASE BASKET O EUROCOPTER ASSO & 355 SERIES SAN 78401-01

MAXIMUM PERMISSIBLE LOAD 250 LBS/113 KG

AERO DESIGN LTD.
CALCARY, ALBERTA, CANADA 403-220-6027

PLACARD FOR 78401 BASKET INSTALLATION

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

SECTION 50 – CARGO COMPARTMENTS

The Quick Release Cargo Basket Installation may be applied to the right or left side of the helicopter.

25-1 BEAMS INSTALLATION

Refer to section 25-6 for part numbers.

The HIGH beam mounting position (configuration 78602-02-XX) is standard and uses the LOWER set of holes in the beams. The LOW beam mounting position (configuration 78602-01-XX) is required if the helicopter is fitted with cargo compartment extenders ("squirrel cheeks"), and uses the UPPER set of holes in the beams.

Installation pictures show LEFT SIDE, HIGH mounted installation.

 Position two (2) Clamp Assemblies 78620-01 around each cross tube. Fasten clamps using one AN4-14A Bolt, two (2) AN960-416 Washers and MS21044N4 Nut through one side of the Clamp Assembly and one FT4F-175H T-Bolt and BH00182A4 Self-Aligning Nut through the other side of the Clamp Assembly. Fully torque AN4-14A bolt, do not tighten T-Bolt.

Note orientation (refer to figure 25.1 thru 25.3):

Forward – Top: Lug Outboard
Forward – Bottom: Lug Inboard
Aft – Top: Lug Inboard
Lug Inboard
Lug Inboard

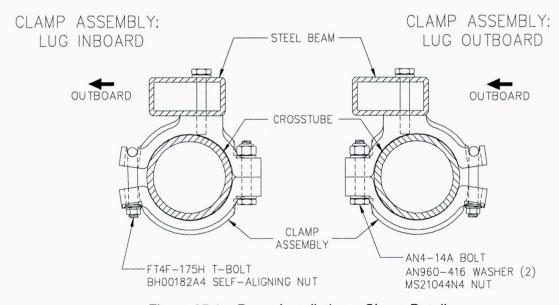


Figure 25.1 – Beam Installation – Clamp Detail

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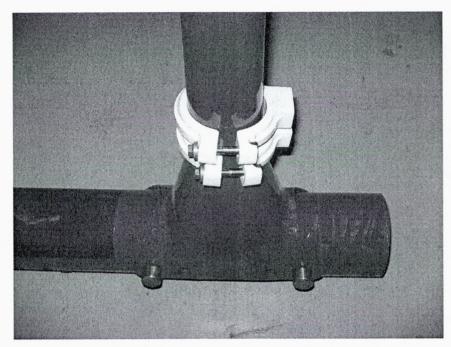


Figure 25.2 - Aft Cross Tube Clamps

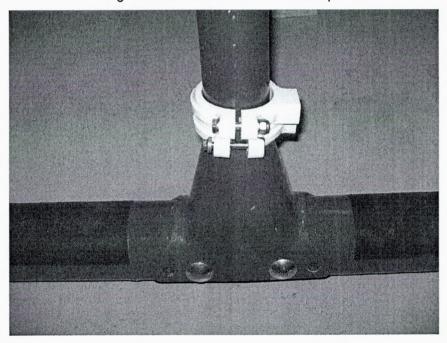


Figure 25.3 – Forward Cross Tube Clamps

2. Attach Forward Beam Assembly to Clamp Assemblies on forward cross tube with two (2) AN4-14A Bolts and two (2) AN960-416 Washers. Locate clamps on LOWER set of holes in beam for HIGH installation, or UPPER set of holes for LOW installation. Do not fully tighten bolts. Position beam so that the bottom clamp is slightly above the weld at the bottom of the cross tube. Tighten clamp bolts enough to prevent slippage on the tube while adjusting installation in following steps.

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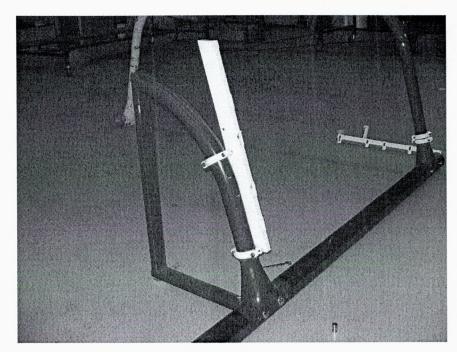


Figure 25.4 – Forward Beam Installation (Looking aft)

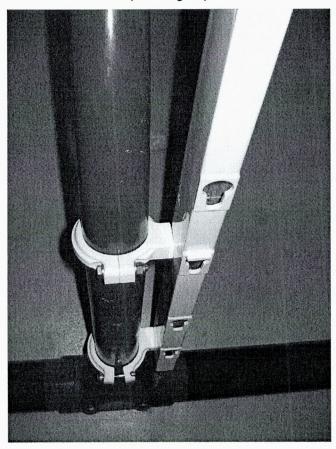


Figure 25.4 – Forward Beam Installation (Looking down)

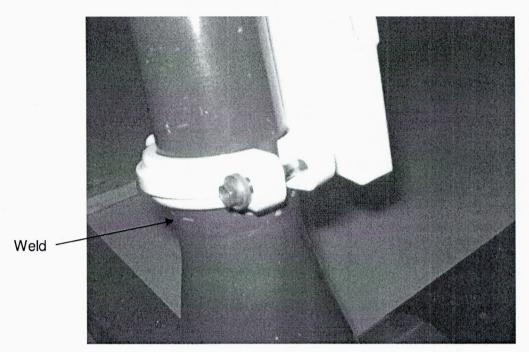


Figure 25.5 - Forward Beam Installation, Bottom Clamp

3. Attach Aft Beam Assembly to Clamp Assemblies on aft cross tube with two (2) AN4-14A Bolts and two (2) AN960-416 Washers. Locate clamps on LOWER set of holes in beam for HIGH installation, or UPPER set of holes for LOW installation. Do not fully tighten bolts. Position beam so that the bottom clamp is slightly above the weld at the bottom of the cross tube. Tighten clamp bolts enough to prevent slippage on the tube while adjusting installation in following steps.

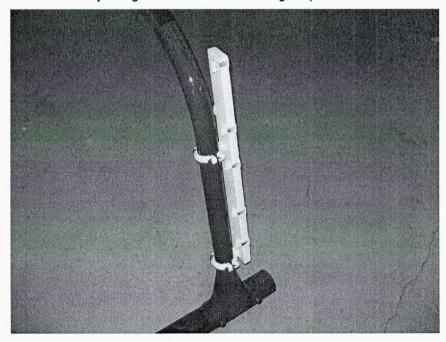


Figure 25.6 - Aft Beam Installation (Looking aft)

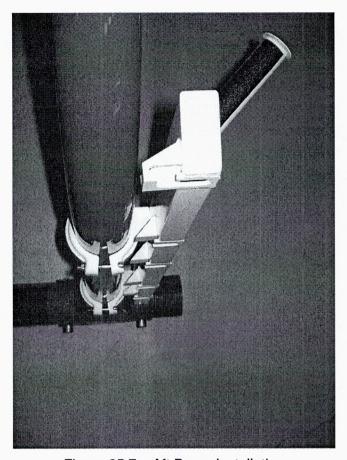


Figure 25.7 – Aft Beam Installation (Looking down)

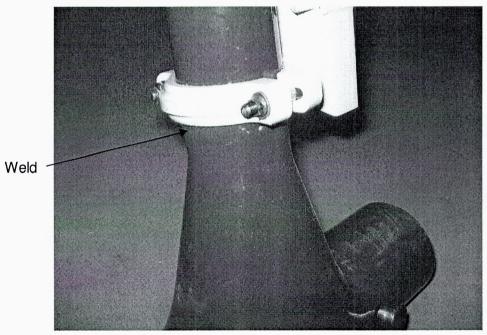


Figure 25.8 – Aft Beam Installation, Bottom Clamp

4. Using a large square or straight edge as a reference, align the forward and aft beams with the cross tubes. Loosen bolts if required to adjust the beam, re-tighten clamp bolts after adjusting.

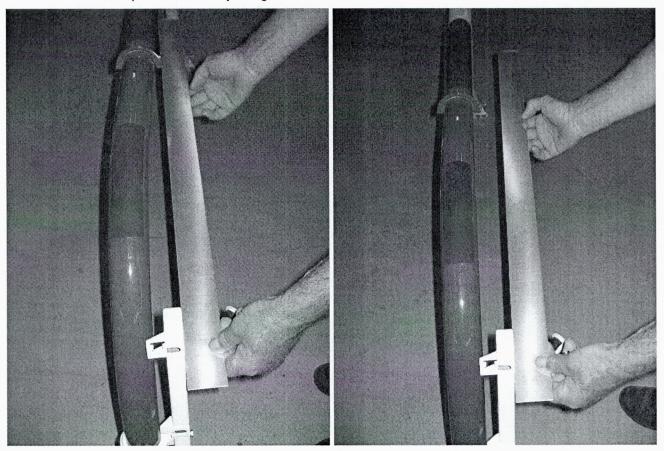


Figure 25.9 – Beam Alignment (Note left picture is not parallel to cross tube, right picture is correct)

5. In order to easily snap the basket in and out of the beams, the beams must be correctly aligned. The following steps detail the alignment procedures. Ensure beams are approximately parallel and aligned front to back before starting. For all procedures listed below, set the basket on the beams as described, remove the basket to apply the correction and re-check with the basket after.

a. Beams too close together or too far apart (basket cannot be installed in top slots):

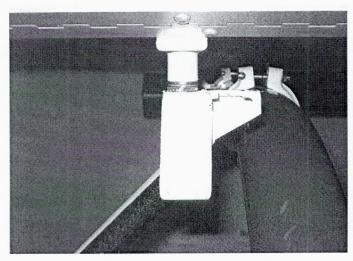
Set upper aft attachment fitting on basket into top keyway in aft beam and slide basket aft. Attempt to insert upper forward fitting into top keyway of forward beam.











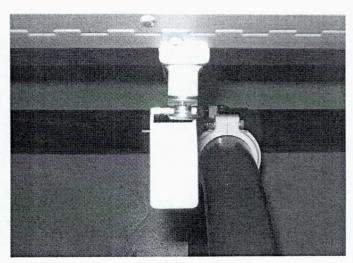


Figure 25.10 – Beam Adjustment, Step 1 – Beams too close together (Looking down, left picture aft beam, right picture forward beam)

The basket attachment fittings should be centred on the beams to allow for some fore/aft movement on the aft beam if required due to landing conditions or changes in weight and balance. Note in Figure 25.10 the aft fitting is bottomed in the aft slot and the forward fitting cannot be inserted. In this case the AFT beam would require shimming.

Using 1/4" commercial stainless steel fender washers, shim the forward or aft beam as required by inserting washer(s) between the beam and both clamps. Only use enough shims to allow basket to enter the TOP slot.

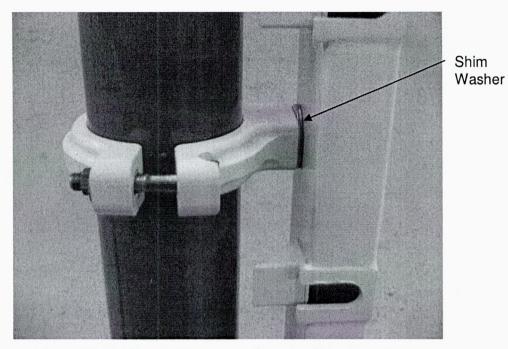
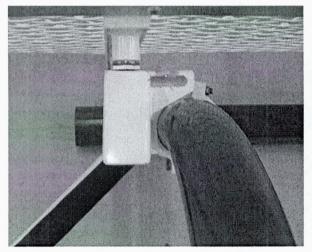


Figure 25.11 – Beam Adjustment, Step 1 – Shim Rear Beam



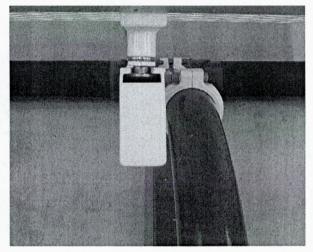


Figure 25.12 – Beam Adjustment, Step 1 – Basket Attachments After Shimming

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> b. Basket in top slots, resting with bottom fittings against beams (not in keyways), forward fitting does not line up with keyway (fore/aft):



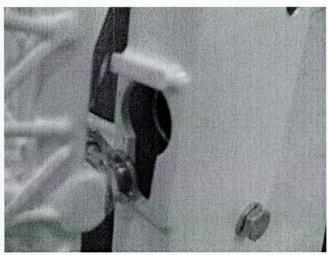
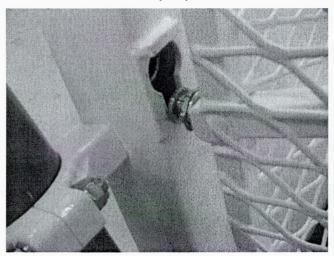


Figure 25.13 – Basket Adjustment Step 2 – Forward Fitting Out of Alignment (Left picture is looking aft, right picture is looking forward)

The beams are not at the same height. Raise or lower the aft beam along the aft cross tube until the bottom fittings on the basket are aligned with both keyways.



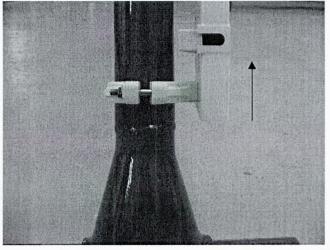


Figure 25.14 – Basket Adjustment Step 2 – Forward Fitting Aligned (Aft beam moved up to align forward fitting with keyway)

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c. Basket in top slots, resting with bottom fittings against beams, bottom aft fitting bottoms out in keyway:

The landing gear cross tubes are not parallel. Using 1/4" commercial stainless steel fender washers, shim the top or bottom (as required) to align the bottom fitting on the basket with the keyway.

d. Basket in top slots, resting with bottom fitting against beams, bottom fitting is away from the surface of the forward beam (outboard):

The beams are not parallel. Adjust the forward beam up or down the forward cross tube until both bottom fittings sit flat on the beams.

e. Basket in all keyways, does not slide smoothly in and out of forward beam:

Opposite attachment fittings on the basket (top front and bottom aft or bottom front and top aft) may be shimmed out using a maximum of two (2) additional AN960-616 washers to allow the basket to slide into the keyways without twisting.

6. Bolts attaching beams to clamps (AN4-14A) that have been shimmed require longer bolts. There must be at least 0.38" of thread protruding with shims in place.

1 washer – AN4-14A bolt (no change)

2-3 washers - AN4-15A bolt

4-5 washers – AN4-16A bolt

Shimming in excess of 5 washers may indicate incorrect alignment in step 5. Confirm corrective actions taken, and if shims are still required, contact AERO Design Ltd. for further instructions.

7. Torque all 1/4" fasteners (12 places) to 30-40 inch-pounds. Note: A gap will remain on the side of the clamp assembly with the T-bolt as shown in Figure 25.1.

25-2 EUROCOPTER POD COMPATIBLE BEAMS INSTALLATION

A helicopter that is fitted with Eurocopter Extended Cargo Compartment ("Squirrel Cheeks") requires different Clamp Assemblies as listed in section 25-6, (configuration 78603-01-XX). Installation procedure is the same as listed in Section 25-1, with the beams mounted in the LOW position.

Ensure Clamp Assemblies are correct for the side of the helicopter the basket is to be installed on. The beam mounting lug is on the BOTTOM of the clamp and points AFT. The forward top clamp is different than the other three clamps.

25-3 BEAMS REMOVAL

Refer to Figure 25.1.

- 1. Remove Cargo Basket. Refer to section 25-5.
- 2. Remove fasteners securing clamp assemblies to the forward cross-tube. Remove Beam Assembly with clamps.
- 3. Remove fasteners securing clamp assemblies to the aft cross-tube. Remove Beam Assembly with clamps.

25-4 BASKET INSTALLATION

Refer to Figure 25.15 and Figure 25.16. Refer to section 25-6 for part numbers.

- 1. Set basket upper aft attachment into upper keyway in aft beam. Forward end of basket may rest on floor.
- 2. Lift basket from forward end, slide lower aft attachment into keyway on aft beam.
- 3. At forward attachment hoop, lift basket until lower attachment fitting hits stop.
- 4. Push fitting into keyway and slide basket down until locked.

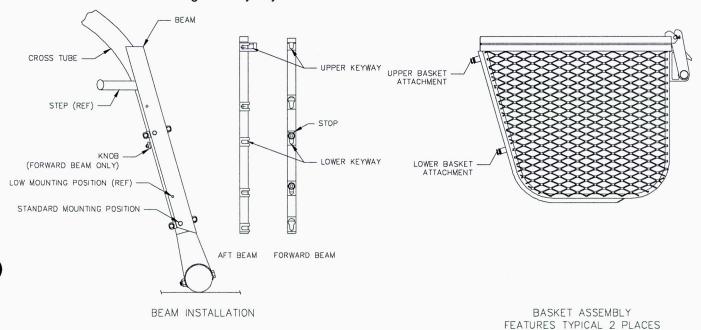


Figure 25.15 – Basket Attachment Features

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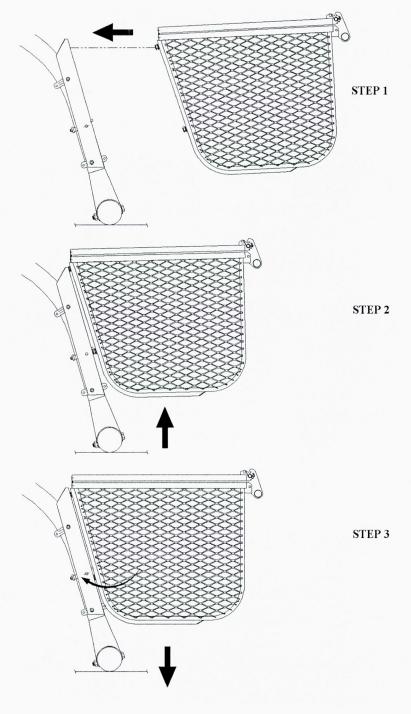


Figure 25.16 - Basket Attachment Steps

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25-5 BASKET REMOVAL

Refer to Figure 25.15 and Figure 25.16.

- 1. Pull knob at bottom end of forward beam and lift basket until attachment fittings are free of keyways on forward beam.
- 2. Rotate basket up until lower aft attachment fitting is free of keyway. Rest forward end of basket on floor.
- 3. Slide basket forward and raise basket until upper aft attachment fitting is free of keyway.

25-6 BILL OF MATERIALS

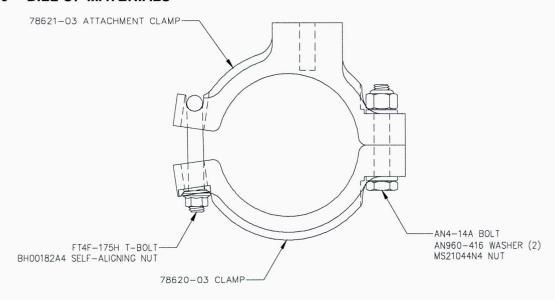
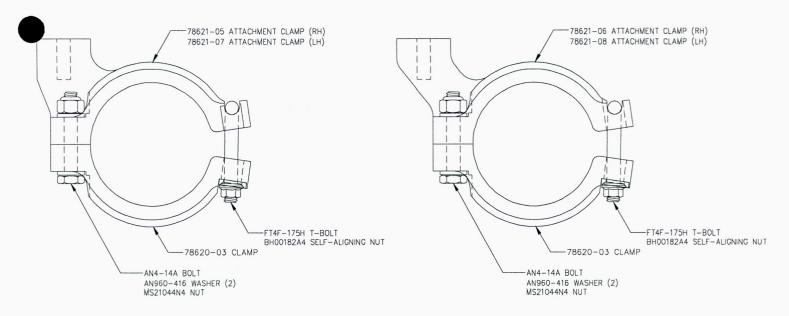


Figure 25.17 - Clamp Assembly

CLAMP ASSEMBLY (Standard)

Qty.	Part Number	Description
	78620-01	Clamp Assembly
. 1	78620-02	Attachment Clamp (with mounting pad)
. 1	78620-03	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut



FORWARD TOP ONLY

Figure 25.18 – Eurocopter Pod Compatible Clamps (Right Hand shown, Left Hand opposite)

CLAMP ASSEMBLY (Eurocopter Pod Compatible)

Qty.	Part Number	Description
	78621-01	Right Hand Clamp Assembly
. 1	78621-05	Attachment Clamp
	78621-02	Right Hand, Forward Top, Clamp Assembly
. 1	78621-06	Attachment Clamp
	78621-03	Left Hand Clamp Assembly
. 1	78621-07	Attachment Clamp
	78621-04	Left Hand, Forward Top Clamp Assembly
. 1	78621-08	Attachment Clamp
. 1	78621-09	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut

PROVISIONS INSTALLATION

LOW CONFIGURATION

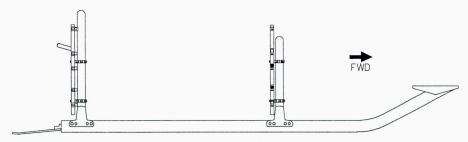


Figure 25.19 – Low Mounted Provisions Installation

Qty.	Part Number	Description
1	78602-01-01	Provisions Installation- RH Low
1	78602-01-02	Provisions Installation- LH Low
. 4	78620-01	Clamp Assembly
. 1	78633-01-01	Aft Beam Assembly (RH)
. 1	78633-01-02	Aft Beam Assembly (LH)
. 1	78634-01-00	Forward Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

HIGH CONFIGURATION

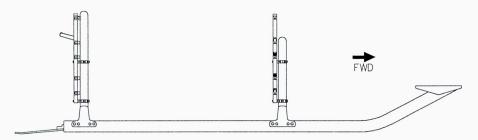


Figure 25.20 – High Mounted Provisions Installation

Qty.	Part Number	Description
1	78602-02-01	Provisions Installation – RH High
1	78602-02-02	Provisions Installation – LH High
. 4	78620-01	Clamp Assembly
. 1	78633-01-01	Aft Beam Assembly (RH)
. 1	78633-01-02	Aft Beam Assembly (LH)
. 1	78634-01-00	Forward Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

EUROCOPTER POD COMPATIBLE CONFIGURATION

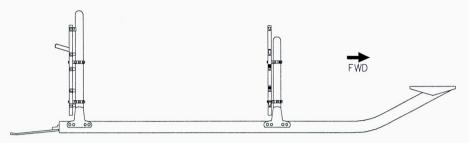


Figure 25.21 – Eurocopter Pod Compatible Provisions Installation

Qty.	Part Number	Description
1	78603-01-01	Provisions Installation – RH Eurocopter Pod Compatible
1	78603-01-02	Provisions Installation – LH Eurocopter Pod Compatible
. 3	78621-01	Clamp Assembly (RH)
. 3	78621-03	Clamp Assembly (LH)
. 1	78621-02	Clamp Assembly (RH – Forward Top)
. 1	78621-04	Clamp Assembly (LH – Forward Top)
. 1	78633-01-01	Aft Beam Assembly (RH)
. 1	78633-01-02	Aft Beam Assembly (LH)
. 1	78634-01-00	Forward Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

SHORT BASKET - MODEL 776



Figure 25.22 – Quick Release Cargo Basket Configuration 77601 (Short Basket)

Qty.	Part Number	Description
1	77601-01-XX	Low Short Basket Installation
. 1	78602-01-XX	Low Provisions Installation
. 1	77610-01	Short Basket Assembly
1	77601-02-XX	High Short Basket Installation
. 1	78602-02-XX	High Provisions Installation
. 1	77610-01	Short Basket Assembly
1	77601-03-XX	Eurocopter Pod Compatible Short Basket Installation
. 1	78603-01-XX	Eurocopter Pod Compatible Provisions Installation
. 1	77610-01	Short Basket Assembly

Note: -XX indicates side. Right side -01, left side -02

MEDIUM BASKET - MODEL 764



Figure 25.23 – Quick Release Cargo Basket Configuration 76401 (Medium Basket)

Qty.	Part Number	Description
1	76401-01-XX	Low Medium Basket Installation
. 1	78602-01-XX	Low Provisions Installation
. 1	76410-01-XX	Medium Basket Assembly
1	76401-02-XX	High Medium Basket Installation
. 1	78602-02-XX	High Provisions Installation
. 1	76410-01-XX	Medium Basket Assembly
1	76401-03-XX	Eurocopter Pod Compatible Medium Basket Installation
. 1	78603-01-XX	Eurocopter Pod Compatible Provisions Installation
. 1	76410-01-XX	Medium Basket Assembly

Note: -XX indicates side. Right side -01, left side -02

LONG BASKET - MODEL 78401

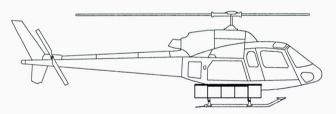


Figure 25.24 – Quick Release Cargo Basket: Configuration 78401 (Long Basket)

Qty.	Part Number	Description
1	78401-01-XX	Low Long Basket Installation
. 1	78602-01-XX	Low Provisions Installation
. 1	78410-01	Long Basket Assembly
1	78401-02-XX	High Long Basket Installation
. 1	78602-02-XX	High Provisions Installation
. 1	78410-01	Long Basket Assembly
1	78401-03-XX	Eurocopter Pod Compatible Long Basket Installation
. 1	78603-01-XX	Eurocopter Pod Compatible Provisions Installation
. 1	78410-01	Long Basket Assembly

Note: -XX indicates side. Right side -01, left side -02

25-6 WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 764, 776 and 784 and attachment provisions 786. Each cargo basket model has multiple configurations. Refer to the weight and balance information applicable to basket model and configuration installed.

Determine which mounting position (Low, High, or Eurocopter Pod Compatible) and length (Short, Medium, or Long) and locate on chart.

Two weight and balance configurations are required: Attachment Provisions only; and Basket Installed. The basket configurations INCLUDE the provisions.

	T		St	andard Unit	s	1			N	Metric Units		
		Weight	Longitu	udinal	Late	eral		Weight	Longitu	udinal	Late	ral
Configuration			Arm	Moment	Arm	Moment			Arm	Moment	Arm	Moment
		lb	in	in-lb	in	in-lb		kg	mm	mm-kg	mm	mm-kg
Mounting Provisions Installation	Part Number											
Right Hand												
Low	78602-01-01	6.4	135.6	867.5	37.2	238.0		2.9	3443.0	9970.6	944.6	2735.4
High	78602-02-01	6.4	135.6	867.5	36.5	233.8		2.9	3443.0	9970.6	928.1	2687.6
Eurocopter Pod Compatible	78603-01-01	6.8	135.4	921.0	38.8	263.6		3.1	3440.1	10 584.8	984.6	3029.6
Left Hand						7.						
Low	78602-01-02	6.4	135.6	867.5	-37.2	-238.0		2.9	3443.0	9970.6	-944.6	-2735.4
High	78602-02-02	6.4	135.6	867.5	-36.5	-233.8		2.9	3443.0	9970.6	-928.1	-2687.6
Eurocopter Pod Compatible	78603-01-02	6.8	135.4	921.0	-38.8	-263.6	_	3.1	3440.1	10584.8	-984.6	-3029.6
Short Basket Installation Right Hand			1000 - 1000 - 100				十					
	77601-01-01	41.4	135.9	5627.5	45.9	1900.5	-	18.7	3452.6	64678.3	1166.0	21842.9
Low High	77601-01-01	41.4	135.9	5627.5	45.5	1868.3	-	18.7	3452.6	64678.3	1146.3	21473.2
							-				1212.9	22941.6
Eurocopter Pod Compatible	77601-03-01	41.8	135.9	5681.0	47.8	1996.1	\dashv	18.9	3452.1	65292.5	1212.9	22941.6
Left Hand Low	77601-01-02	41.4	135.9	5627.5	-45.9	-1900.5	_	18.7	3452.6	64678.3	-1166.0	-21842.9
High	77601-01-02	41.4	135.9	5627.5	-45.9 -45.1	-1868.3	\dashv	18.7	3452.6	64678.3	-1146.3	-21473.2
Eurocopter Pod Compatible	77601-02-02	41.8	135.9	5681.0	-47.8	1996.1	\dashv	18.9	3452.1	65292.5	-1212.9	-22941.6
Eurocopter Pod Compatible	77601-03-02	41.0	135.9	3001.0	-47.0	1990.1		10.9	3452.1	05292.5	-1212.9	-22941.0
Medium Basket Installation Right Hand												
Low	76401-01-01	51.4	144.0	7401.5	46.7	2402.5	-	23.3	3657.6	85067.2	1187.2	27612.4
High	76401-02-01	51.4	144.0	7401.5	46.0	2362.3	\dashv	23.3	3657.6	85067.2	1167.4	27150.9
Eurocopter Pod Compatible	76401-02-01	51.8	143.9	7455.0	48.6	2518.1	-	23.4	3655.5	85681.4	1234.7	28941.1
Left Hand	70404 04 00	F1.4	1110	7404 5	40.7	0400.5	-	00.0	0057.0	05007.0	1107.0	-27612.4
Low	76401-01-02	51.4	144.0	7401.5 7401.5	-46.7 -46.0	-2402.5	-	23.3	3657.6	85067.2	-1187.2 -1167.4	
High Eurocopter Pod Compatible	76401-02-02	51.4	144.0	7455.0		-2362.3	$ \vdash$	23.3	3657.6	85067.2		-27150.9
Eurocopter Pod Compatible	76401-03-02	51.8	143.9	7455.0	-48.6	-2518.1		23.4	3655.5	85681.4	-1234.7	-28941.1
Long Basket Installation												
Right Hand	70404 04 54	20.5	100.5	2227.5	47.1	2000.5	_		0.450.0	00047.5	1000 1	0.4707.4
Low	78401-01-01	63.9	136.0	8687.5	47.4	3026.8	_	28.9	3453.3	99847.5	1203.1	34787.1
High	78401-02-01	63.9	136.0	8687.5	46.6	2976.6	_	28.9	3453.3	99847.5	1183.2	34210.6
Eurocopter Pod Compatible	78401-03-01	64.3	135.9	8741.0	49.3	3167.4	-	29.1	3452.9	100461.7	1251.2	36403.0
Left Hand												
Low	78401-01-02	63.9	136.0	8687.5	-47.4	-3026.8		28.9	3453.3	99847.5	-1203.1	-34787.1
High	78401-02-02	63.9	136.0	8687.5	-46.6	-2976.6		28.9	3453.3	99847.5	-1183.2	-34210.6
Eurocopter Pod Compatible	78401-03-02	64.3	135.9	8741.0	-49.3	-3167.4		29.1	3452.9	100461.7	-1251.2	-36403.0

Table 25.1 - Weight and Balance

Revision 3 25-50-00

OPTIONS. The following weight and balance is for optional configurations of the basket.

Standard Units

P/N	Description	Weight	Longitudinal		La	ateral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
70406-01	Front End Cutout	-0.3	107.8	-32.3	*	*
70405-01	Lid Step (Short Basket)	4.0	136.0	544.0	*	*
70405-01	Lid Step (Medium Basket)	5.8	145.2	842.2	*	*
70405-01	Lid Step (Long Basket)	7.7	136.0	1047.2	*	*
70408-01	Hangar Wheel (Short/Medium Basket)	0.8	110.0	88.0	*	*
70408-01	Hangar Wheel (Long Basket)	0.8	92.0	73.6	*	*

Metric Units

P/N	Description	Weight	Longitudinal		Li	ateral
			arm	Moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
70406-01	Front End Cutout	-0.1	2730.5	-273.1	*	*
70405-01	Lid Step (Short Basket)	1.8	3453.3	6215.9	*	*
70405-01	Lid Step (Medium Basket)	2.6	3688.1	9589.1	*	*
70405-01	Lid Step (Long Basket)	3.5	3453.3	12086.6	*	*
70408-01	Hangar Wheel (Short/Medium Basket)	0.4	2794.0	1117.6	*	*
70408-01	Hangar Wheel (Long Basket)	0.4	2336.8	934.7	*	*

Table 25.2 - Options Weight and Balance

25-7 STRUCTURAL FASTENER DATA

Refer to Eurocopter Standard Practices Manual for torque values not listed in this ICA.

^{*}Note: Lateral arm is the same as the basket configuration. Lateral moment is calculated with the lateral arm.



Department of Transport

Supplemental Type Certificate

This approval is issued to:

Number: SH08-16

Aero Design Ltd.

Issue No.: 2

2013 39th Avenue North East

Aircraft/Engine Type or Model:

Approval Date: April 11, 2008

Calgary, Alberta

Issue Date: March 22, 2010

Canada T2E 6R7

Prairie and Northern

Responsible Office:

EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3,

AS 350 BA, AS 350 D, AS 350 D1,

EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS

355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent:

H-83, H-87

Description of Type Design Change:

Installation of External Attachment Provisions and Cargo

Basket.

Installation/Operating Data,

Required Equipment and Limitations:

Configuration A – External Attachment Provisions Only:

Installation of External Attachment Provisions to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL786-1, Revision 2, dated 01 February 2010, or later approved revision.

External Attachment Provisions installed in accordance with DCL786-1 may remain installed if the basket installation is removed.

Configuration B - External Cargo Basket (Short Basket):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration B, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL776-1, Revision 2, dated 01 February 2010, or later approved revision.

...See Continuation Sheet

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.



D.S. Austen For Minister of Transport



DESIGN APPROVAL DOCUMENT TRANSFER

Transfer of this design approval document requires the prior approval of the Minister and the reissue of this document in the name of the transferee.

The reissue of this design approval document in the name of the transferee will be contingent on the holder and the transferee fulfilling their responsibilities as described in section 521.357 of the Canadian Aviation Regulations.

TRANSFERT DU DOCUMENT D'APPROBATION DE LA CONCEPTION

L'approbation préalable du ministre est exigée en vue d'un transfert de ce document d'approbation de la conception et la réédition de ce document au nom du cessionnaire.

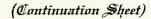
La réédition de ce document d'approbation de la conception au nom du cessionnaire est conditionnelle à la satisfaction des exigences et des responsabilités, du titulaire et du cessionnaire, décrites dans l'article 521.357 du Règlement de l'aviation canadien.

I have reviewed the above requirements and recognize that until the above requirements are met the certificate and all its privileges and obligations will not be transferred.

J'ai examiné les conditions susmentionnées et je comprends que le transfert du certificat et des privilèges et des obligations s'y rattachant ne sera pas effectué tant que ces conditions n'auront pas été respectées.

Signature of holder/signature du titulaire date/date







Number: SH08-16 Issue 2

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration C – External Cargo Basket (Short Basket – Alternate):

-Removed-

Configuration D - External Cargo Basket (Medium Basket):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration D, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL764-1, Revision 2, dated 01 February 2010, or later approved revision.

Configuration E - External Cargo Basket (Long Basket)

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration E, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL784-1, Revision 2, dated 01 February 2010, or later approved revision.

Configuration F - External Cargo Basket (Long Basket - Alternate) -Removed-

Cargo Basket Modifications:

Modifications to the Cargo Basket configurations are eligible in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL704, Revision 2, dated 19 March 2008, or later approved revision. Eligibility limitations are noted on the drawings.

Data Pertinent to All Configurations:

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS764-91, Revision 1, dated 29 January 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA764-90, Revision 2, dated 22 December 2009, or later accepted revision is required with this installation.

Basis of certification remains as defined in the applicable Type Certificate Data Sheets.

- End -

AS350 & AS355 SERIES HELICOPTERS

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

for the

INSTALLATION of the AERO DESIGN QUICK RELEASE CARGO BASKET AND/OR QUICK RELEASE MAINTENANCE STEP

CARGO BASKET MODELS: 76401, 77601, 78401

TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory. Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Cargo Basket Installation and/or Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.

Transport Transports
Canada Canada

AIRCRAFT CERTIFICATION
DIVISION

APPROVED

By D. S. Cluster

Approval Date 10-03-22

YY MM-DD

Revision 1 29 January, 2010 Page 1
TRANSPORT CANADA APPROVED

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IV	Performance	3
٧	Weight and Balance	4
VI	Installation / removal instructions	14

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	Ву
0	25 Feb, 2008	None		
1	29 Jan, 2010	All		

I LIMITATIONS

- The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Models 764 and 784 is 250 lb. (113 kg). The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Model 776 is 300 lb. (135.7 kg).
- 2. Only one basket may be installed on the helicopter, on the right or left side.
- Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
- 4. V_{NE} is unchanged from the basic rotorcraft.
- 5. AS355NP only: For Category A operations, the basket must be removed. Mounting provisions may be left in place.

II NORMAL PROCEDURES

- 1. Pre-flight inspections:
 - a) Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - c) Ensure the basket is locked in postion on the beams. Pull up on the forward and aft end of the basket to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

- Cruise performance and range will be reduced by approximately 8 percent with the Cargo Basket Installed.
- 2. AEO climb performance will be reduced by up to 150 fpm.

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V WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 76401, 77601, and 78401. Each model has multiple configurations. Refer to the weight and balance information applicable to model and configuration installed.

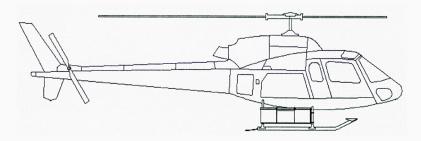
Weight and balance is for Cargo Basket only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

Longitudinal and Lateral moment arms for Cargo are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

 MODEL 77601 (Short Basket). The following weight and balance is for the cargo basket installed in accordance with drawing 77601.



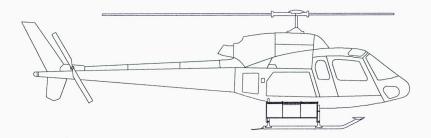
A) Configuration 77601-01 (Short Basket, Low mounted)

Standard

Otandard							
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		lb	in	in-lb	in	in-lb	
77610-01	Basket (RH)	35.0	135.7	4749.5	48.1	1683.5	
	Maximum Cargo (RH)	300.0	135.7	40710.0	48.1	14430.0	
77610-01	Basket (LH)	35.0	135.7	4749.5	-48.1	-1683.5	
	Maximum Cargo (LH)	300.0	135.7	40710.0	-48.1	-14430.0	

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
77610-01	Basket (RH)	15.8	3446.8	54587.0	1221.7	19348.8
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1221.7	165784.7
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1221.7	-19348.8
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1221.7	-165784.7

FMS764.91



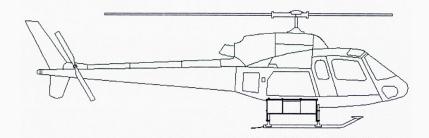
B) Configuration 77601-03 (Short Basket, Mid mounted)

Standard

	Otariaara							
P/N	Description	Weight	Longitudinal		Lateral			
			arm	moment	arm	moment		
		lb	in	in-lb	in	in-lb		
77610-01	Basket (RH)	35.0	135.7	4749.5	46.5	1627.5		
	Maximum Cargo (RH)	300.0	135.7	40710.0	46.5	13950.0		
77610-01	Basket (LH)	35.0	135.7	4749.5	-46.5	-1627.5		
	Maximum Cargo (LH)	300.0	135.7	40710.0	-46.5	-13950.0		

P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
77610-01	Basket (RH)	15.8	3446.8	54587.0	1181.1	18705.2	
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1181.1	160275.3	
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1181.1	-18705.2	
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1181.1	-160275.3	

FMS764.91



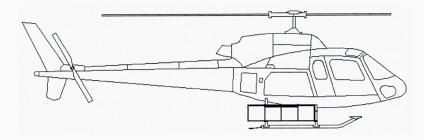
C) Configuration 77601-02 (Short Basket, High mounted)

Standard

Standard								
P/N	Description	Weight	Longitudinal		Lateral			
			arm	moment	arm	moment		
		lb	in	in-lb	in	in-lb		
77610-01	Basket (RH)	35.0	135.7	4749.5	45.6	1596.0		
	Maximum Cargo (RH)	300.0	135.7	40710.0	45.6	13680.0		
77610-01	Basket (LH)	35.0	135.7	4749.5	-45.6	-1596.0		
	Maximum Cargo (LH)	300.0	135.7	40710.0	-45.6	-13680.0		

metrio							
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
77610-01	Basket (RH)	15.8	3446.8	54587.0	1158.2	18343.2	
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1158.2	157167.7	
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1158.2	-18343.2	
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1158.2	-157167.7	

2. **MODEL 76401 (Medium Basket)**. The following weight and balance is for the cargo basket installed in accordance with drawing 76401.



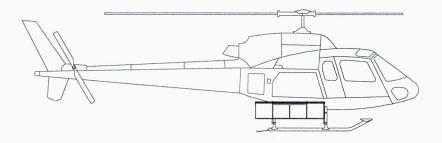
A) Configuration 76401-01 (Medium Basket, Low Mounted)

Standard

Ctaridard							
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		lb	in	in-lb	in	in-lb	
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	48.6	2187.0	
	Maximum Cargo (RH)	250.0	144.9	36225.0	48.6	12150.0	
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-48.6	-2187.0	
	Maximum Cargo (LH)	250.0	144.9	36225.0	-48.6	-12150.0	

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1234.4	25135.7
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1234.4	139610.6
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1234.4	-25135.7
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1234.4	-139610.6

FMS764.91



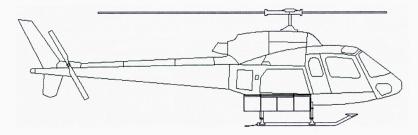
B) Configuration 76401-03 (Medium Basket, Mid Mounted)

Standard

P/N	Description	Weight	Longitudinal		Lateral			
			arm	moment	arm	moment		
		lb	in	in-lb	in	in-lb		
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	47.0	2115.0		
	Maximum Cargo (RH)	250.0	144.9	36225.0	47.0	11750.0		
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-47.0	-2115.0		
	Maximum Cargo (LH)	250.0	144.9	36225.0	-47.0	-11750.0		

P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1193.8	24308.1	
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1193.8	135018.8	
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1193.8	-24308.1	
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1193.8	-135018.8	

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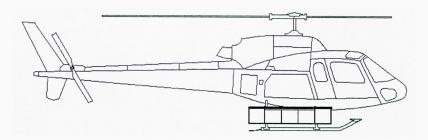
C) Configuration 76401-02 (Medium Basket, High Mounted)

Standard

P/N	Description	Weight	Longitudinal		Lateral			
			arm	moment	arm	moment		
		lb	in	in-lb	in	in-lb		
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	46.1	2074.5		
	Maximum Cargo (RH)	250.0	144.9	36225.0	46.1	11525.0		
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-46.1	-2074.5		
	Maximum Cargo (LH)	250.0	144.9	36225.0	-46.3	-11525.0		

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1170.9	23842.7
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1170.9	132428.8
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1170.9	-23842.7
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1170.9	-132428.8

3. **MODEL 78401 (Long Basket)**. The following weight and balance is for the cargo basket installed in accordance with drawing 78401.



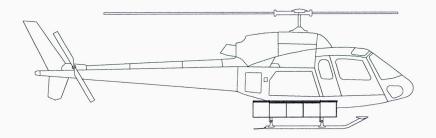
A) Configuration 78401-01 (Long Basket, Low Mounted)

Standard

	- Otaliaala					
P/N	Description	Weight	Longi	tudinal	Lat	eral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78410-01	Basket (RH)	57.5	135.7	7802.8	48.4	2783.0
	Maximum Cargo (RH)	250.0	135.7	33925.0	48.4	12100.0
78410-01	Basket (LH)	57.5	135.7	7802.8	-48.4	-2783.0
	Maximum Cargo (LH)	250.0	135.7	33925.0	-48.4	-12100.0

P/N	Description	Weight	Long	gitudinal	La	teral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78410-01	Basket (RH)	26.0	3446.8	89678.7	1229.4	31985.6
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1229.4	139045.1
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1229.4	-31985.6
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1229.4	-139045.1

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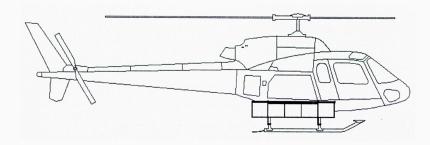


B) Configuration 78401-03 (Long Basket, Mid Mounted)

Standard

P/N	Description	Weight	Longi	tudinal	Lat	teral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78410-01	Basket (RH)	57.5	135.7	7802.8	47.0	2702.5
	Maximum Cargo (RH)	250.0	135.7	33925.0	47.0	11750.0
78410-01	Basket (LH)	57.5	135.7	7802.8	-47.0	-2702.5
	Maximum Cargo (LH)	250.0	135.7	33925.0	-47.0	-11750.0

Wetto						
P/N	Description	Weight	Long	itudinal	La	teral
18			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78410-01	Basket (RH)	26.0	3446.8	89678.7	1193.8	31060.4
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1193.8	135018.8
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1193.8	-31060.4
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1193.8	-135018.8



C) Configuration 78401-02 (Long Basket, High Mounted)

Standard

	Standard					
P/N	Description	Weight	Longi	tudinal	Lat	eral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78410-01	Basket (RH)	57.5	135.7	7802.8	46.1	2650.8
	Maximum Cargo (RH)	250.0	135.7	33925.0	46.1	11525.0
78410-01	Basket (LH)	57.5	135.7	7802.8	-46.1	-2650.8
	Maximum Cargo (LH)	250.0	135.7	33925.0	-46.1	-11525.0

P/N	Description	Weight	Long	itudinal	La	teral		
			arm	moment	arm	moment		
		kg	mm	mm-kg	mm	mm-kg		
78410-01	Basket (RH)	26.0	3446.8	89678.7	1170.9	30465.6		
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1170.9	132428.8		
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1170.9	-30465.6		
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1170.9	-132428.8		

VI INSTALLATION / REMOVAL INSTRUCTIONS

Cargo Baskets

The beams are installed in accordance with 78601. The basket is installed in accordance with drawing 76401, 77601 or 78401, as applicable. Removal of the basket leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket and which weight and balance amendment is in effect is required when basket is installed or removed.

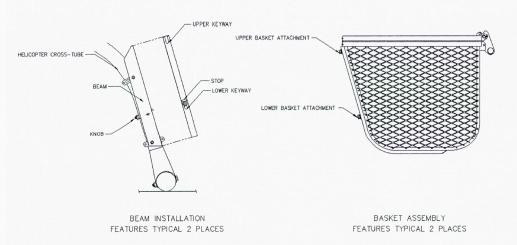


Figure 1 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical for low and high beam installations)

- 4. Installation Refer to Figure 1 and Figure 2.
 - a) Set basket upper attachment into upper keyway in forward and aft beams.
 - b) At forward attachment hoop, lift basket until lower attachment fitting hits stop.
 - c) Push fitting into keyway and slide basket down until locked.
 - d) Repeat step a,b and c for aft attachment hoop.

- 2. Removal Refer to Figure 1 and Figure 2.
 - a) Pull knob at bottom end of forward beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
 - b) Pull knob at bottom end of aft beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
 - c) Lift basket until upper attachments are out of keyways on both beams and remove basket from helicopter.

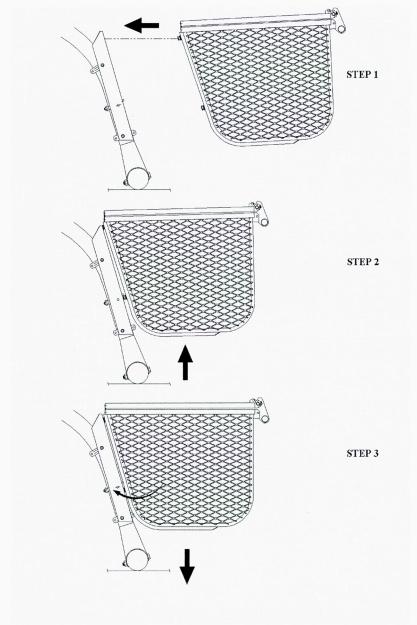


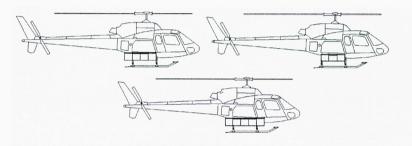
Figure 2 – Basket Attachment Steps (Low basket installation shown. Installation instructions typical for low and high basket installation).

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 764.90

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE CARGO BASKET

MODELS: 764, 776 AND 784



TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Cargo Basket installed in accordance with AERO Design Ltd. **Document Control Lists:**

- DCL764-1 (for Installation 76401), Revision 2,
- DCL776-1 (for Installation 77601), Revision 2,
- DCL784-1 (for Installation 78401), Revision 2,
- DCL786-1 (for mounting provision), Revision 2, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

> Revision 2 Date: 22 December, 2009

AERO Design Ltd. **Engineering Consultants** 2013 - 39th Avenue N.E., Calgary, Alberta T2E 6R7

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	Ву
0	25 February 2008		Original Issue
1	24 June, 2009		
2	22 December 2009		

LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue) Revision 1 Revision 2	25 February, 2008 24 June, 2009 22 December, 2009

List of Effective Pages

Description	<u>Pages</u>	Revision No.
Cover	1	2
Revision Record/List of Effective Pages	2	2
Table of Contents	3	2
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04-00-00	6	1
05-00-00	7-10	1
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CHAPTER 0 - INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Cargo Basket as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Cargo Basket. Requests for a copy may be made in writing to:

AERO Design Ltd. 2013 39th Avenue N.E. Calgary, Alberta T2E 6R7

Fax: 403-250-8333

Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter. AERO Design Ltd. ICA 764.90

0-5 GENERAL DESCRIPTION

The cargo basket installation is a metal mesh basket installed to the side of the helicopter on beams attached to the landing gear cross tubes. The quick release basket allows for the installation and removal of the basket without tools, leaving the mounting beams in place.

The basket itself is made of a steel welded tubing structure, and lined with expanded steel mesh. The basket has a hinged lid with a self-locking handle.

The beams consist of a steel tube bolted to a clamp on the cross-tube. The quick release mechanism is built into the steel tube.

Revision 0 **00-00-00** Page 5

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Cargo Basket.

Revision 1 **04-00-00** Page 6

AERO Design Ltd. ICA 764.90

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Cargo Basket.

Daily Inspection

- 1. Inspection Area: Basket
 - a) Inspect the basket attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.
 - b) Inspect latching of the lid for correct operation. If basket is bent inward the lid will close but may not latch.

300 Hour or Annual Inspection

- 1. Inspection Area: Basket
 - a) Visually inspect tube-to-tube welds and mesh-to-tube welds for cracks, corrosion or other damage.
 - b) Visually inspect basket mesh for damage.
- 2. Inspection Area: Beams

With the basket removed:

- a) Visually inspect beams and clamps attaching basket to the helicopter for cracks, corrosion or other damage.
- b) Visually inspect lugs attaching the basket to the beams for security and damage.
- c) Visually inspect bolts attaching beams to clamps and clamps to cross tubes for condition and security.

Special Inspections

- 1. Following a hard landing inspect the Quick Release Cargo Basket installation in accordance with the 300 hour or annual inspection listed above.
- 2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

Revision 1 05-00-00

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Basket

- a) Repair Basket in accordance with AC43.13-1B, Chapter 4, Section 5, Welding, as required.
- b) Basket is fabricated from the following materials:

Attachment Hoops: 1" square steel tube and/or ½" square steel tube

Lid and Rim:

3/4" square steel tube

Frames:

½" square steel tube

Mesh:

3/4" 16 ga. (0.040") expanded steel mesh

c) Touch up with polyurethane paint as required following repairs.

2. Steel Beams

DO NOT REPAIR DAMAGE TO BEAMS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on the inboard face up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour.
- b) Nicks and/or gouges on the side and outboard faces up to 0.060" deep and 0.125" wide may be dressed out to a smooth contour.
- c) Critical keyway dimensions are shown in Figure 1. Attempt to insert 27/64 drill shank into bottom end of keyway. If drill can be inserted, slot is worn beyond limit.

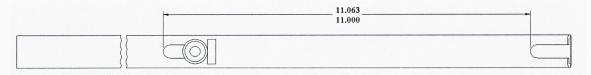


Figure 5.1 – Keyway dimensions – typical for low and high beam assemblies

d) Touch up with polyurethane paint as required following repairs.

3. Aluminum Clamps

DO NOT REPAIR DAMAGE TO CLAMPS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on the top or bottom surface up to 0.060" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 2.
- b) Nicks and/or gouges on the outer edge up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 2.
- c) Any cracking on any surface is unacceptable.
- d) Touch up with polyurethane paint as required following repairs.

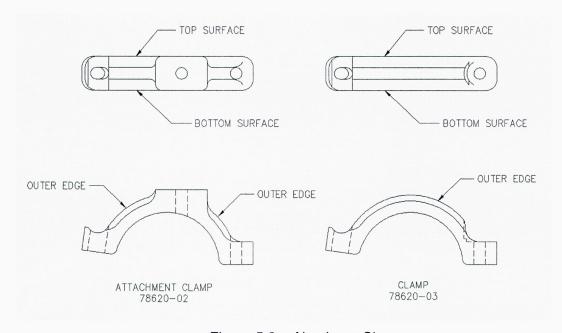


Figure 5.2 – Aluminum Clamps

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

1/4-28 insert: 3591-4CN375

AERO Design Ltd. ICA 764.90

5-3 PROTECTIVE TREATMENT INFORMATION

1. Beams

The steel tubes are supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

2. Clamps

The aluminum clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

3. Cargo Basket

The cargo basket is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

Revision 1 05-00-00

CHAPTER 11 - MARKINGS AND PLACARDS

The following markings and placards are used with the Quick Release Cargo Basket Installation in the locations noted:

a) Located on basket lid:



PLACARD FOR 77601 BASKET INSTALLATION



PLACARD FOR 76401 BASKET INSTALLATION



PLACARD FOR 78401 BASKET INSTALLATION

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

SECTION 50 - CARGO COMPARTMENTS

The Quick Release Cargo Basket Installation may be applied to the right or left side of the helicopter.

BEAMS INSTALLATION 25-1

Refer to Figure 25.1. Refer to section 25-5 for part numbers.

- 1. Attach two (2) Attachment Clamps (78620-02) to each Beam Assembly with two (2) AN4-14A Bolts and two (2) AN960-416 Washers. Do not tighten bolts.
- 2. Locate the Beam Assemblies onto the forward and aft skid gear cross-tubes. Both clamps on the aft beam are positioned with lugs inboard (see figure 25.1). Upper clamp on the forward beam is positioned with lug outboard, lower clamp is positioned with lug inboard.
- 3. Position two (2) Clamps (78620-03) onto the Attachment Clamps (78620-02) around cross tube. Fasten together using one AN4-14A Bolt, AN960-416 Washers and MS21044N4 Nut through one side of the Clamp Assembly and one FT4F-175H T-Bolt and BH00182A4 Self-Aligning Nut through the other side of the Clamp Assembly. Tighten bolts enough to prevent slippage on the tube while adjusting installation in step 4.

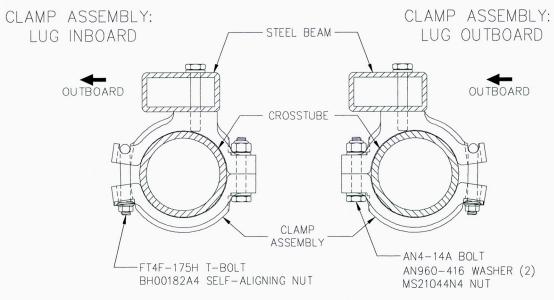


Figure 25.1 – Beam Installation – Clamp Detail Lug Inboard and Lug Outboard Installations Shown

4. In order to easily snap the basket in and out of the beams, the beams must be correctly aligned. The following procedures provide corrective actions for the conditions noted. Ensure beams are approximately parallel and aligned front to back before starting. For all procedures listed below, remove the basket before applying the correction and re-check after.

Revision 2 25-50-00 a. Beams too far apart (basket cannot be installed in top slots):

If the distance is less than 1/8": Rotate the forward beam slightly aft and/or the aft beam slightly forward until the basket can be set in the top slot of the beam.

If the distance is more than 1/8": Using 1/4" commercial stainless steel fender washers, shim the FORWARD beam by inserting the washer(s) between the beam and both clamps. Only use enough shims to allow basket to enter the TOP slot.

b. Beams too close together (basket cannot be installed in top slots):

If the distance is less than 1/8": Rotate the forward beam slightly forward and/or the aft beam slightly aft until the basket can be set in the top slot of the beam.

If the distance is more than 1/8": Using 1/4" commercial stainless steel fender washers, shim the AFT beam by inserting the washer(s) between the beam and both clamps. Only use enough shims to allow basket to enter the TOP slot.

c. Basket in top slots, resting with bottom fitting against beams, one fitting is away from the surface of the beam:

The beams are not parallel. Adjust the forward beam up or down the forward cross tube until both bottom fittings sit flat on the beams.

d. Basket in top slots, resting with bottom fittings against beams, both fittings do not line up with keyway (same direction):

The beams are not at the same height. Raise or lower the aft beam along the aft cross tube until the bottom fittings on the basket are aligned with both keyways.

e. Basket in top slots, resting with bottom fittings against beams, one fitting does not line up with keyway:

The landing gear cross tubes are not parallel. Using ½" commercial stainless steel fender washers, shim the top or bottom (as required) to align the bottom fitting on the basket with the keyway.

- 5. Bolts attaching beams to clamps (AN4-14A) that have been shimmed require longer bolts. There must be at least 0.38" of thread protruding with shims in place.
 - 1 washer AN4-14A bolt (no change)
 - 2-3 washers AN4-15A bolt
 - 4-5 washers AN4-16A bolt

Shimming in excess of 5 washers may indicate incorrect alignment in step 4. Confirm corrective actions taken, and if shims are still required, contact AERO Design Ltd. for further instructions.

6. Torque all ¼" fasteners (12 places) to 50-70 inch-pounds. Note: A gap will remain on the side of the clamp assembly with the T-bolt as shown in Drawing 78601 and Figure 3.

Revision 2 25-50-00

25-2 BEAMS REMOVAL

Refer to Figure 25.1.

- 1. Remove Cargo Basket. Refer to section 25-4.
- 2. Remove fasteners securing clamp assemblies to the forward cross-tube. Remove Beam Assembly.
- 3. Remove fasteners securing clamp assemblies to the aft cross-tube. Remove Beam Assembly.

25-3 BASKET INSTALLATION

Refer to Figure 25.2 and Figure 25.3. Refer to section 25-5 for part numbers.

- 1. Set basket upper attachment into upper keyway in forward and aft beams.
- 2. At forward attachment hoop, lift basket until lower attachment fitting hits stop.
- 3. Push fitting into keyway and slide basket down until locked.
- 4. Repeat step 2 and Step 3 for aft attachment hoop.

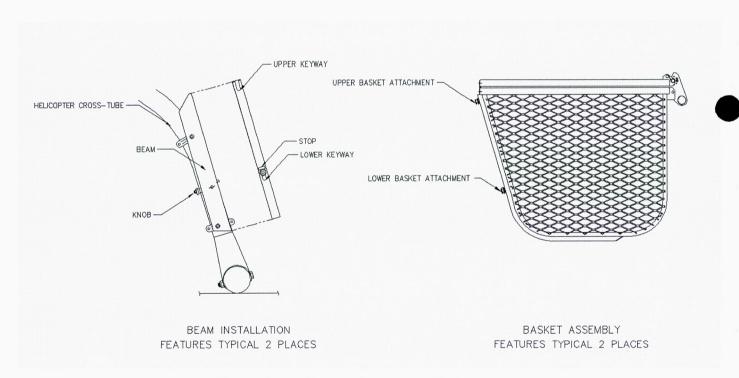


Figure 25.2 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical.)

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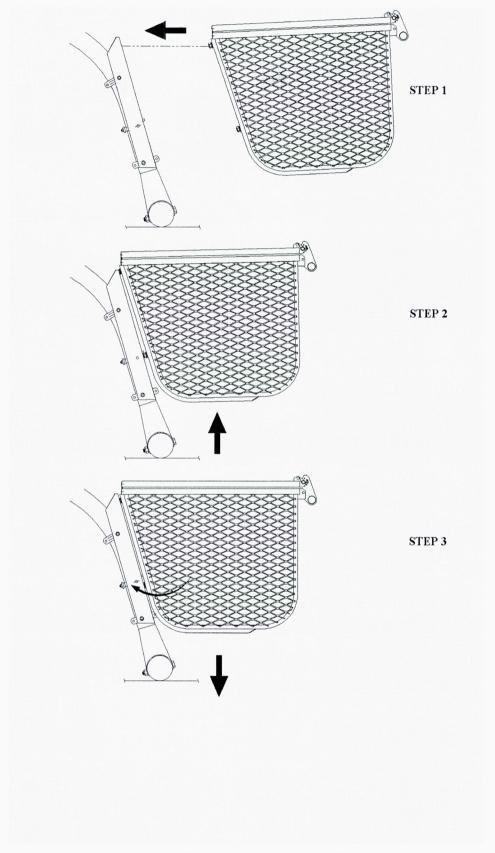


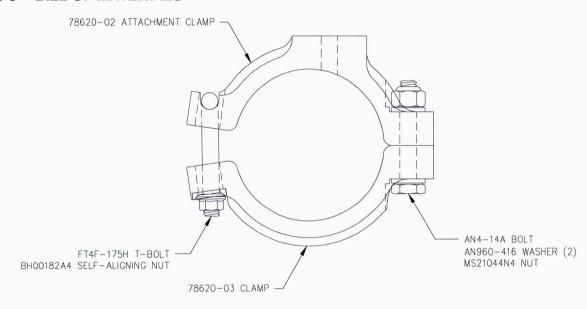
Figure 25.3 – Basket Attachment Steps

25-4 BASKET REMOVAL

Refer to Figure 4 and Figure 5.

- 1. Pull knob at bottom end of forward beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
- 2. Pull knob at bottom end of aft beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
- 3. Lift basket until upper attachments are out of keyways on both beams and remove basket from helicopter.

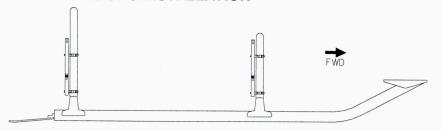
25-5 BILL OF MATERIALS



CLAMP ASSEMBLY

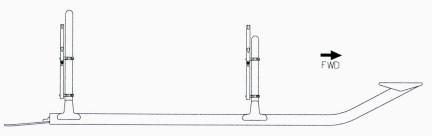
Qty.	Part Number	Description
1	78620-01	Clamp Assembly
. 1	78620-02	Attachment Clamp (with mounting pad)
. 1	78620-03	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut

LOW PROVISIONS INSTALLATION



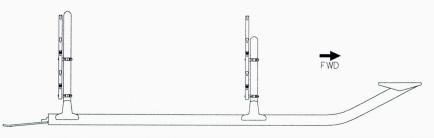
Qty.	Part Number	Description
1	78601-01-01	Low Provisions Installation- RH
1	78601-01-02	Low Provisions Installation- LH
. 4	78620-01	Clamp Assembly
. 2	78630-01	Low Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

MID PROVISIONS INSTALLATION



Qty.	Part Number	Description
1	78601-03-01	Mid Provisions Installation - RH
1	78601-03-02	Mid Provisions Installation - LH
. 4	78620-01	Clamp Assembly
. 2	78632-01	Mid Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

HIGH PROVISIONS INSTALLATION



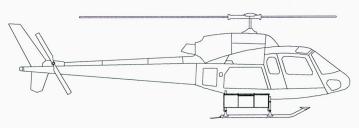
Qty.	Part Number	Description
1	78601-02-01	High Provisions Installation - RH
1	78601-02-02	High Provisions Installation - LH
. 4	78620-01	Clamp Assembly
. 2	78631-01	High Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

SHORT BASKET - MODEL 77601



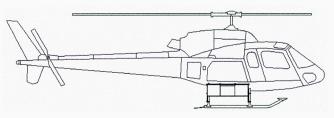
Quick Release Cargo Basket: Configuration 77601-01 (Short Basket, Low mounted)

Qty.	Part Number	Description
1	77601-01-01	Short Basket Installation (Low - RH)
. 1	78601-01-01	Low Provisions Installation (RH)
. 1	77610-01	Short Basket Assembly
1	77601-01-02	Short Basket Installation (Low - LH)
. 1	78601-01-02	Low Provisions Installation (LH)
. 1	77610-01	Short Basket Assembly



Quick Release Cargo Basket: Configuration 77601-03 (Short Basket, Mid mounted)

Qty.	Part Number	Description
1	77601-03-01	Short Basket Installation (Mid - RH)
. 1	78601-03-01	Mid Provisions Installation (RH)
. 1	77610-01	Short Basket Assembly
1	77601-03-02	Short Basket Installation (Mid - LH)
. 1	78601-03-02	Mid Provisions Installation (LH)
. 1	77610-01	Short Basket Assembly

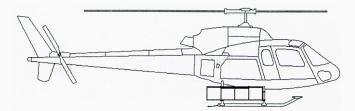


Quick Release Cargo Basket: Configuration 77601-02 (Short Basket, High mounted)

Qty.	Part Number	Description
1	77601-02-01	Short Basket Installation (High - RH)
. 1	78601-02-01	High Provisions Installation (RH)
. 1	77610-01	Short Basket Assembly
1	77601-02-02	Short Basket Installation (High - LH)
. 1	78601-02-02	High Provisions Installation (LH)
. 1	77610-01	Short Basket Assembly

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MEDIUM BASKET - MODEL 76401



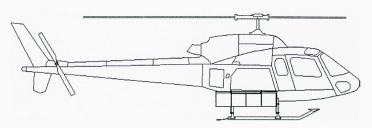
Quick Release Cargo Basket: Configuration 76401-01 (Medium Basket, Low Mounted)

Qty.	Part Number	Description
1	76401-01-01	Medium Basket Installation (Low - RH)
. 1	78601-01-01	Low Provisions Installation (RH)
. 1	76410-01-01	Medium Basket Assembly (RH)
1	76401-01-02	Medium Basket Installation (Low - LH)
. 1	78601-01-02	Low Provisions Installation (LH)
. 1	76410-01-02	Medium Basket Assembly (LH)



Quick Release Cargo Basket: Configuration 76401-03 (Medium Basket, Mid Mounted)

Qty.	Part Number	Description
1	76401-03-01	Medium Basket Installation (Mid - RH)
. 1	78601-03-01	Mid Provisions Installation (RH)
. 1	76410-01-01	Medium Basket Assembly (RH)
1	76401-03-02	Medium Basket Installation (Mid - LH)
. 1	78601-03-02	Mid Provisions Installation (LH)
. 1	76410-01-02	Medium Basket Assembly (LH)

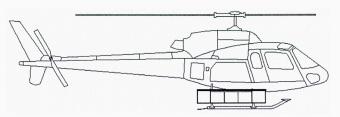


Quick Release Cargo Basket: Configuration 76401-02 (Medium Basket, High Mounted)

Qty.	Part Number	Description
1	76401-02-01	Medium Basket Installation (High - RH)
. 1	78601-02-01	High Provisions Installation (RH)
. 1	76410-01-01	Medium Basket Assembly (RH)
1	76401-02-02	Medium Basket Installation (High - LH)
. 1	78601-02-02	High Provisions Installation (LH)
. 1	76410-01-02	Medium Basket Assembly (LH)

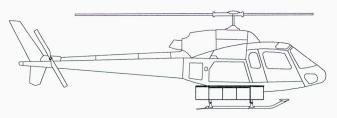
Revision 2 25-50-00

LONG BASKET - MODEL 78401



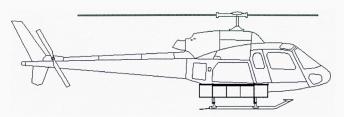
Quick Release Cargo Basket: Configuration 78401-01 (Long Basket, Low Mounted)

Qty.	Part Number	Description
1	78401-01-01	Long Basket Installation (Low - RH)
. 1	78601-01-01	Low Provisions Installation (RH)
. 1	78410-01	Long Basket Assembly
1	78401-01-02	Long Basket Installation (Low - LH)
. 1	78601-01-02	Low Provisions Installation (LH)
. 1	78410-01	Long Basket Assembly



Quick Release Cargo Basket: Configuration 78401-03 (Long Basket, Mid Mounted)

Qty.	Part Number	Description
1	78401-03-01	Long Basket Installation (Mid - RH)
. 1	78601-03-01	Mid Provisions Installation (RH)
. 1	78410-01	Long Basket Assembly
1	78401-03-02	Long Basket Installation (Mid - LH)
. 1	78601-03-02	Mid Provisions Installation (LH)
. 1	78410-01	Long Basket Assembly



Quick Release Cargo Basket: Configuration 78401-02 (Long Basket, High Mounted)

Qty.	Part Number	Description
1	78401-02-01	Long Basket Installation (High - RH)
. 1	78601-02-01	High Provisions Installation (RH)
. 1	78410-01	Long Basket Assembly
1	78401-02-02	Long Basket Installation (High - LH)
. 1	78601-02-02	High Provisions Installation (LH)
. 1	78410-01	Long Basket Assembly

25-6 WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 764, 776 and 784. Each cargo basket model has multiple configurations. Refer to the weight and balance information applicable to basket model and configuration installed.

Determine which height (low, mid or high) and length (short, medium, or long) and locate on chart. If arm is required, divide the moment by the weight.

Lateral moment shown is for right side. Left side installation lateral moment is negative.

Two weight and balance configurations are required: Attachment Provisions only; and Basket Installed.

			Basket Configuration											
			Provisions Or	ıly		Short			Medium			Long		
Part No.			78601-XX			77601-XX			76401-XX			78401-XX		
			Longitudinal	Lateral		Longitudinal	Lateral		Longitudinal	Lateral		Longitudinal	Lateral	
Mounting	Dash	weight	moment	moment	weight	moment	moment	weight	moment	moment	weight	moment	moment	
Provisions	No.	lbs	in-lb	in-lb	lbs	in-lb	in-lb	lbs	in-lb	in-lb	lbs	in-lb	in-lb	
Standard Wall														
Low	-01	6.4	866.8	241.0	41.4	5616.3	1924.5	51.4	7387.3	2428.0	63.9	8669.6	3024.0	
Mid	-03	8.0	1083.9	298.2	43.0	5833.4	1925.7	53.0	7604.4	2413.2	65.5	8886.7	3000.7	
High	-02	9.4	1273.9	346.0	44.4	6023.4	1942.0	54.4	7794.4	2420.5	66.9	9076.7	2996.8	
Light Wall														
Low	-01	3.4	459.7	128.2	38.4	5209.2	1724.2	48.4	6980.2	2202.7	60.9	8262.5	2778.9	
Mid	-03	4.0	541.1	149.4	39.0	5290.6	1745.4	49.0	7061.6	2223.9	61.5	8343.9	2800.2	
High	-02	4.8	649.7	177.2	39.8	5399.2	1773.2	49.8	7170.2	2251.7	62.3	8452.4	2828.0	

Table 25.1 – Weight and Balance (Standard Units)

			Basket Configuration											
			Provisions Or	nly		Short			Medium			Long		
Part No.			78601-XX			77601-XX			76401-XX			78401-XX		
			Longitudinal	Lateral		Longitudinal	Lateral		Longitudinal	Lateral		Longitudinal	Lateral	
	Dash	weight	moment	moment	weight	moment	moment	weight	moment	moment	weight	moment	moment	
Provisions	No.	kg	mm-kg	mm-kg	kg	mm-kg	mm-kg	kg	mm-kg	mm-kg	kg	mm-kg	mm-kg	
Standard Wall														
Low	-01	2.9	9962.3	2769.4	18.7	64549.3	22118.2	23.3	84903.8	27905.1	28.9	99641.0	34755.0	
Mid	-03	3.6	12457.7	3427.7	19.5	67044.7	22132.9	24.0	87399.2	27735.9	29.6	102136.4	34488.1	
High	-02	4.3	14641.2	3976.9	20.1	69228.2	22320.0	24.6	89582.7	27819.6	30.3	104319.9	3442.5	
Light Wall														
Low	-01	1.5	5283.4	1473.0	17.4	59870.4	19816.1	21.9	80224.9	25315.6	27.6	94962.1	31938.6	
Mid	-03	1.8	6219.2	1717.5	17.6	60806.2	20060.7	22.2	81160.7	25560.2	27.8	95797.9	32183.2	
High	-02	2.2	7466.9	2036.6	18.0	62053.9	20379.8	22.5	82408.4	25879.3	28.2	97145.6	32502.2	

Table 25.2 – Weight and Balance (Metric Units)

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OPTIONS. The following weight and balance is for optional configurations.

Standard

P/N	Description	Weight	Lon	gitudinal	al Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
70406-01	Front End Cutout	-0.3	107.5	-32.3	*	*
70405-01	Lid Step (Short Basket)	4.0	135.7	542.8	*	*
70405-01	Lid Step (Medium Basket)	5.8	144.9	840.4	*	*
70405-01	Lid Step (Long Basket)	7.7	135.7	1044.9	*	*

Metric

P/N	Description	Weight	Long	gitudinal	Lateral	
			arm	Moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
70406-01	Front End Cutout	-0.1	2730.5	-273.1	*	*
70405-01	Lid Step (Short Basket)	1.8	3446.8	6204.2	*	*
70405-01	Lid Step (Medium Basket)	2.6	3680.5	9569.3	*	*
70405-01	Lid Step (Long Basket)	3.5	3446.8	12063.8	*	*

^{*}Note: Lateral arm is the same as the basket configuration. Lateral moment is calculated with the lateral arm.

25-7 STRUCTURAL FASTENER DATA

Refer to Eurocopter Standard Practices Manual for torque values not listed in this ICA.

DOCUMENT NO.	DOCU	MENT CONTENT	REVISION		
INSTALLATION DOCUMENTS					
77601	Quick Release Cargo	2			
ICA764.90	Instructions for Cont	Instructions for Continued Airworthiness			
FMS764.91	Flight Manual Supple	ement	1		
FABRICATION DOCUMENTS					
DCL776-3	Document Control Li	ist - Basket Assembly	1		
ENGINEERING DOCUMENTS					
ENGINEERING DOCUMENTS					
APPROVAL:		T	A		
Transport Transports	ORIGINAL DATE: 06 March 2008	AERO DESIG			
Canada Canada	REVISION DATE:	2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027			
AIRCRAFT CERTIFICATION DIVISION	01 February 2010	Fax. (403) 250-83	333		
APPROYED		Eurocopter AS350 & A	AS355 Series		
By S. austen	SHEET 1 OF 1	Quick Release Car			
Appr'l No. 5H08-16		Installatio			
Appr'l Date 08 - 04 - 11 Issue No. 2			Rev.		
Issue Date 10 -03-22	DC	L776-1	2		
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS FABRICATION DOCUMENTS 77610 77611 77612 76421 76422 77627 69823 49215 49216 84255 84261 84262 84265 84267 84272 36273 36274 36275 36277 36278 36280	Basket Assembly Basket Body Asseml Lid Assembly Hoop Hoop Assembly Placard Lug Spacer Spacer Handle Assembly Handle Bar Assembl Handle Bracket Asse Handle Lever Handle Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly	у	1 1 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
ENGINEERING DOCUMENTS ER764.01 TP764.02 FTP764.03 ER764.04	Engineering Report Test Plan/Report Flight Test Plan/Rep Engineering Report	ort	0 0 0 0
APPROVAL: Transport Transports Canada Canada AIRCRAFT CERTIFICATION	ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010	AERO DESIG 2013 – 39 th Ave NE, Calgary, A Ph. (403) 250-803 Fax. (403) 250-83	lberta, T2E 6R7 27
APPROVED By 2 5 Cluster Appril No. 5H08-16	SHEET 1 OF 1	Eurocopter AS350 & A Quick Release Carg Basket Asser	go Basket
Appr'l Date 08-04-11 Issue No. Z Issue Date 10-03-22 YY-MM-DD	DC	L776-3	Rev.

APPROVED SHEET 1 OF 1 Quick Release Cargo Baske Installation	DOCUMENT CONTENT REVISION	DOCU	DOCUMENT NO.		
Instructions for Continued Airworthiness 2 Flight Manual Supplement 1 FABRICATION DOCUMENTS DCL764-3 Document Control List - Basket Assembly 2 ENGINEERING DOCUMENTS ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010 APPROVAL: ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010 SHEET 1 OF 1 Eurocopter AS350 & AS355 Se Quick Release Cargo Baske Installation			INSTALLATION DOCUMENTS		
FMS764.91 FABRICATION DOCUMENTS DCL764-3 Document Control List - Basket Assembly 2 ENGINEERING DOCUMENTS APPROVAL: ORIGINAL DATE: 156 March 2008 REVISION DATE: 157 February 2010 APPROVED APPROVED APPROVED APPROVED SHEET 1 OF 1 Eurocopter AS350 & AS355 Se Quick Release Cargo Baske Installation Rev. Rev.	elease Cargo Basket Installation 2	Quick Release Cargo Basket Installation			
ENGINEERING DOCUMENTS	ons for Continued Airworthiness 2	Instructions for Conti	ICA764.90		
ENGINEERING DOCUMENTS APPROVAL: ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010 APPROVED AND JACOB CARGO APPROVED AND JACOB CARGO APPROVED AND JACOB CARGO APPROVED AND JACOB CARGO BELLO CARGO BELLO CARGO CARGO APPROVED AND JACOB CARGO BELLO CARGO C	anual Supplement 1	Flight Manual Supple	FMS764.91		
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INSTALLATION DOCUMENTS FABRICATION DOCUMENTS 76410 76411 69812 76421 76422 76423 76427 69823 69824 49212 49213 49215 49216 84255 84261 84262 84265 84267 84272 36273 36274 36275 36277 36278 36280	Basket Assembly Basket Body Asseml Lid Assembly Hoop Hoop Assembly Placard Lug Rim Rim Lid Brace Spacer Spacer Handle Bar Assembly Handle Bar Assembly Handle Bracket Assemble Handle Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly	ly	2 2 2 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0
ENGINEERING DOCUMENTS ER764.01 TP764.02 FTP764.03 ER764.04	Engineering Report Test Plan/Report Flight Test Plan/Rep Engineering Report	oort	0 0 0 0
APPROVAL: Transport Transports Canada Canada AIRCRAFT CERTIFICATION DIVISION	ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010	AERO DESIGN 2013 – 39 th Ave NE, Calgary, Alt Ph. (403) 250-802 Fax. (403) 250-833	perta, T2E 6R7 7
APPROVED By D.S. Cluster Appril No. 5HO8-16	SHEET 1 OF 1	Eurocopter AS350 & A Quick Release Carg Basket Assem	o Basket
Appr'l Date 08-04-11 Issue No. 2 Issue Date 10-03-22 YY-MM-DD	DC	L764-3	2

DOCUMENT NO.	DOCU	MENT CONTENT	REVISION		
INSTALLATION DOCUMENTS					
78401	Quick Release Cargo Basket Installation 2				
ICA764.90	Instructions for Cont	Instructions for Continued Airworthiness			
FMS764.91	Flight Manual Supple	Flight Manual Supplement			
FABRICATION DOCUMENTS					
DCL784-3	Document Control Li	st - Basket Assembly	2		
ENGINEERING DOCUMENTS					
APPROVAL:	ORIGINAL DATE:	4 ED 0 = = 0 : 0			
Transport Transports	06 March 2008	AERO DESIGN LTD.			
Canada Canada	REVISION DATE:	2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333			
AIRCRAFT CERTIFICATION DIVISION	01 February 2010				
APPROVED	SHEET 1 OF 1	Eurocopter AS350 & Quick Release Car			
By D. S. Auster	SHEETTOFT	Installation			
Appr'l No. <u>SH 08 - 16</u> Appr'l Date <u>08 - 04 - 11</u>			Rev.		
Issue No. Z	D.0	1.704.4			
Issue Date 10 -03 -22 YY-MM-DD	DC	L784-1	2		
MARIE CO SIGNIFIQUE CONTROL PRINCIPAL PRINCIPA		7 /			

DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS 78410 78411 78412 76421 76422 76423 78427 69823 49215 49216 84255 84261 84262 84265 84267 84272 36273 36274 36275 36277 36278 36280	Basket Assembly Basket Body Asseml Lid Assembly Hoop Hoop Assembly Placard Lug Spacer Spacer Handle Assembly Handle Bar Assembl Handle Bracket Assembl Handle Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly	ply	1 2 1 0 0 0 1 1 1 1 0 0 0 0 0 0 0 0 0 0
ENGINEERING DOCUMENTS ER764.01 TP764.02 FTP764.03 ER764.04	Engineering Report Test Plan/Report Flight Test Plan/Rep Engineering Report	ort	0 0 0 0
APPROVAL: Transport Transports Canada Canada AIRCRAFT CERTIFICATION	ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010	AERO DESIG 2013 – 39 th Ave NE, Calgary, A Ph. (403) 250-80 Fax. (403) 250-83	lberta, T2E 6R7 27
APPROVED By D.S. Cluster Appr'l No. 5HO8-16	SHEET 1 OF 1	Eurocopter AS350 & A Quick Release Care Basket Asser	go Basket
Appr'l No. 31106 10 Appr'l Date 08 04 11 Issue No. 2 Issue Date 10 03 22 YY-MM-DD	DC	L784-3	2

DOCUMENT NO.	DOCU	MENT CONTENT	REVISION			
INSTALLATION DOCUMENTS						
78601	Attachment Provision	Attachment Provisions Installation				
ICA764.90	Instructions for Cont	inued Airworthiness	2			
FABRICATION DOCUMENTS						
DCL786-3	Document Control Li	ist - Provision Assembly	2			
ENGINEERING DOCUMENTS			2			
APPROVAL:	ODICINAL DATE					
palament and the same of the design of the palament of the state of th	ORIGINAL DATE: 06 March 2008	AERO DESIGI				
Transport Transports Canada Canada	REVISION DATE:	2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333				
AIRCRAFT CERTIFICATION DIVISION	01 February 2010					
APPROVED	SHEET 1 OF 1	Eurocopter AS350 & AS355 S Basket Provision				
By S. austa		Installation				
Appr'l No. SH08-16 Appr'l Date 08-04-11		F	Rev.			
Issue No. 2	DCL786-1 2					
Issue Date 10 - 03 - 22 YY - MM - DD			_			

DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS FABRICATION DOCUMENTS 78620 78630 78631 78632	Clamp Assembly Low Beam Fabricatio High Beam Fabricatio Mid Beam Fabricatio	on	2 2 3 1
ENGINEERING DOCUMENTS ER764.01 TR764.02 FTP764.03 ER764.04	Engineering Report Load Test Plan/Report Flight Test Plan/Report Engineering Report		0 0 0 0
APPROVAL:			
Transport Transports Canada Canada AIRCRAFT CERTIFICATION	ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010	AERO DESIG 2013 – 39 th Ave NE, Calgary, A Ph. (403) 250-80 Fax. (403) 250-80	alberta, T2E 6R7 27
APPROVED By D.S. Cluster Appril No. SHOR-16	SHEET 1 OF 1	Eurocopter AS350 & A Basket Installation Assembly	Provision
Appril Date 08-04-11 Issue No. 2 Issue Date 10-03-22 YY-MM-DD	DC	L786-3	2





1100-9700 Jasper Avenue Edmonton, Alberta T5J 4E6

November 23, 2011

Your file Votre reference

940

Our file Notre reference

C-11-0787 SH08-16

Aero Design Ltd. 2013 39th Avenue North East Calgary, Alberta Canada, T2E 6R7

ATTENTION: EDWARD BURGOIN - DAR 290M

Dear Sirs:

SUBJECT: REVISION TO SUPPLEMENTAL TYPE CERTIFICATE NO. SH08-16 - ISSUE 4

DATED NOVEMBER 23, 2011 - INSTALLATION OF EXTERNAL

ATTACHMENT PROVISIONS AND CARGO BASKET – EUROCOPTER AS350

SERIES AND AS355 SERIES ISSUED TO AERO DESIGN LTD.

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are the documents bearing the original Transport Canada signatures.

The transfer of this SH08-16 in the name of another person requires the prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 521.357.

To accomplish this modification, the requirements of CAR 561 apply if parts are manufactured.

Embodiment of this modification is considered to be a maintenance activity and the requirements of CAR 571.06(4) will apply.

An STC holder is required to report any service problem experienced with their product. Therefore, should you become aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada in accordance with CAR V, Subpart 91. Other obligations as a Design Approval Document Holder are contained in CAR 521, Division VIII.

Yours truly,

J. Staal

Engineering Technologist, Engineering

Civil Aviation

Prairie and Northern Region Phone: 780-495-5227 Facs: 780-495-7963

Encl.



MSI 53 - Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT - CAR 527

BLOCK 1

Name of the applicant for the design change approval:

Aero Design Ltd.

Description of the design change:

Installation of Quick Release Cargo Basket on Eurocopter AS350 & AS355 Series

Certification Basis of design change and revision date:

FAR 27, Amendment 27-20

CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:

Section 0-3 of Supplemental ICA (ICA 764.90)

CAR Standard 513.05 (1) (g) (iv): Installation Instructions:

Installation Drawing 94001, 76401, 77601, 78401, 78602, 78603

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3		
A527.2 (a) Manual(s) (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA764.90)		
A527.2 (b) Practical arrangement (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format		
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information: A527.3 (a) Rotorcraft maintenance manual or				
section				
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1		
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5		

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions. A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3	
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-4	
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-6	
A527.3 (c) Access (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A	
A527.3 (d) Special inspections (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1	
A527.3 (e) Protective treatment (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3	
A527.3 (f) Fasteners, torque values, etc (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-7	
A527.3 (g) Special tools (g) A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A	

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4
maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."		

BLOCK 4 - Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance	with the regulatory standard
that supports this change in type design.	,
Applicants Signature:Da	te:October 21. 2011
	800
Applicants Name: E. Burgoin, P.Eng, DAR 290M	
	and the second s
BLOCK 5 – Minister's Statement of Acceptability	
The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to	the Minister.
Reviewer's Name: Tack Stacl Phone # 780 - 495 - 5227 Email: pack, stack Mail Routing Symbol: RA	ED
@tc.qc.ca	
Signature: () ////add Date: 21 Nov 20//	NAPA Number
Signature:	NAPA Number

CORRESPONDANCE TO:

(If other than applicant)

AIRWORTHINESS REQUIREMENTS COMPLIANCE PROGRAM

Page 1 of 3

CP940

APPLICANT: AERO Design Ltd.

2013 39th Avenue NE

Calgary, Alberta, T2E 6R7

DATE: 20 October 2011

REV. No. 0

MAKE: Eurocopter (Aerospatiale)

MODEL: AS350 Series, AS355 Series

REGISTRATION: All Applicable

SERIAL No.: All Applicable

NATURE OF WORK: Installation of Side-Mounted External Cargo Basket

MODEL CERTIFICATION BASIS: FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification)
MODIFICATION CERTIFICATION BASIS: FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification)

Airworthiness Requirement	9	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
Paragraph	Amd	t.				
Subpart B –	Flight					
27.27 27.29	20 20	Centre of Gravity Limits Empty Weight and Corresponding C of G	N/A Data specified on inst'n drawing		×	No change from Type Approval.
27.45	21	Performance - General	Flight Test	X		
27.51	20	Takeoff	Flight Test	X		
27.65	20	Climb: All Engines Operating	Flight Test	X		
27.71	21	Glide Performance	Flight Test	X		
27.73	20	Performance at Min. Operating Speed	Flight Test	X		
27.75	20	Landing	Flight Test	X		
27.141	20	Flight Characteristics – General	Flight Test	X	ZI No	2011
27.143	21	Controllability and Maneuverability	Flight Test	X	٠, ١	
27.151	21	Flight Controls	Flight Test	Х	9	Flight test in accordance with FTP940.03 and
27.161	21	Trim Control	Flight Test	X	/	flight test performed by Transport Canada
27.171	20	Stability – General	Flight Test	X	PER	HQ Flight Test Report è
27.173	21	Static Longitudinal Stability	Flight Test	X		recommendation.
27.175	21	Demonstration of Longitudinal Stability	Flight Test	X		
27.177	21	Static Directional Stability	Flight Test	X		
27.241	20	Ground Resonance	Flight Test	X		
27.251	20	Vibration	Flight Test	X		2.

Subject for Compliance or Documentary Proof Form of Substantiation

DOT DAR Comments

Airworthiness Requirement

No change from Type Approval. No change from Type Approval.	A/N – statement in report A/N – statement in report	Position Light System Dihedral Angles Anticollision Light System	20 20	27.1387
X Sinstallation does not block doors.	∀/N	Emergency Exits	21	708.72
X Basket is a closed container. Cargo is external to helicopter. No cargo lamps	N/A Compliance with 23.301 through 307 Design N/A N/A	Doors Cargo and Baggage Compartments Cargo and Baggage Compartments Cargo and Baggage Compartments Cargo and Baggage Compartments	50 50 50 50 50	27.783 27.787(a) 27.787(b) 27.787(c) 27.787(d)
X	sisylsnA	Values Fitting Factor	50	529.72
X \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Drawings Drawings Drawings Drawings Values used as per Mil-Hdbk-5J	Design Materials Fabrication Methods Protection of Structure Inspection Provisions Material Strength Properties and Design	20 20 20 20 20 20	77.603 27.603 27.609 17.613 17.613
*		and Construction	ußįsa	Subpart D – De
X X S 27.337 Maneuvering Load is Critical.	Compliance with 27.337	Emergency Landing Conditions - Down	50	(vi)8(d)188.72
31 ×	Analysis and Test isw AC 43.13-1B	Emergency Landing Conditions - Side	20	(iii)£(d)198.72
Forward deflection or failure of basket poses X X X X X X X X X X X X X		Main Rotor Structure Emergency Landing Conditions – Up Emergency Landing Conditions – Fwd Emergency Landing Conditions – Side		27.547 27.561 27.561(b)3(ii) 27.561(b)3(iii)
Forward deflection or failure of basket poses X To no threat to occupants.	Analysis and Test isw AC 43.13-18 Analysis and Test isw AC 43.13-18 ANA Analysis and Test isw AC 43.13-18	Emergency Landing Conditions – Up Emergency Landing Conditions – Fwd Emergency Landing Conditions – Fwd	20 20 20 20	27.561(b)3(i) 27.561(b)3(ii) 27.561(b)3(iii)
X X X X X X X X X X X X X X X X X X X	Compliance with 27.52.73 and 52.73-18 Analysis Analysis and Test isw AC 43.13-18 Analysis and Test isw AC 43.13-18 Analysis and Test isw AC 43.13-18 Flight Test Analysis and Test isw AC 43.13-18 ANAlysis and Test isw AC 43.13-18 AVA	Loads – Inertia Loads Factor of Safety Strength and Deformation Proof of Structure Limit Maneuvering Load Factor – Positive Main Rotor Structure Emergency Landing Conditions – Up Emergency Landing Conditions – Up	20 20 20 20 20 20 20 20 20 20 20 20 20 2	27.301 27.303 27.305 27.305 27.307 27.561 27.561(b)3(ii) 27.561(b)3(ii)

Airworthiness Requirement	5	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT DAR	Comments
Paragraph	Amd	t.		The second secon	
Subpart G – (Operat	ting Limitations and Information			
27.1505	20	Never Exceed Speed	Flight Test, Flight Manual Supplement	x ?	V _{N∈} limits as specified in the existing Flight Manual
27.1525	21	Kinds of Operation	Flight Manual Supplement	x) P	Limited to VFR only.
7.1529	20	Instructions for Continued Airworthiness	ICA Provided	XJ	
27.1557(a)	20	Miscellaneous Markings and Placards – Baggage Compartments	Placard on lid	×ď	ß.
27.1557(b)	20	Miscellaneous Markings and Placards	N/A		
27.1557(c)	20	Miscellaneous Markings and Placards	N/A		
7.1557(d)	20	Miscellaneous Markings and Placards	N/A		
27.1581	20	Rotorcraft Flight Manual – General	Flight Manual Supplement	X	
27.1583(c)	20	Operating Limitations – Weight and Loading Information	Flight Manual Supplement	X	- per HQ F/T and recommende
7.1585	21	Operating Procedures	Flight Manual Supplement	X	7. 30.0
7.1587	21	Performance Information	Flight Manual Supplement	X	
7.1589	20	Loading Information	Flight Manual Supplement & Placard	X	Placard installed on basket lid
CAR 527					
527.1093(b) (1)(ii)+(iii)		Induction System Icing Protection	N/A		No change from Type Approved configuration
527.1301-1		Rotorcraft Operations After Ground Cold Soak	N/A		No change from Type Approved configuration
527.1557(c) 3)		Miscellaneous Markings and Placards – Fuel Filler Openings	N/A		No change from Type Approved configuration
527.1581		Flight Manual - General	Flight Manual Supplement	XO	SI / Imperial units provided
527.1583(h)		Operating Limitations – Ambient Temperature	N/A	7	No change from Type Approved configuration





1100-9700 Jasper Avenue Edmonton, Alberta T5J 4E6

November 19, 2010

Your file Votre reference 764

Our file Notre reference C-10-0807 SH08-16

Aero Design Ltd. 2013 39th Avenue North East Calgary, Alberta Canada, T2E 6R7

Dear Sir:

SUBJECT:

REVISION TO SUPPLEMENTAL TYPE CERTIFICATE NO. SH08-16 – ISSUE 3 DATED OCTOBER 28, 2010 – INSTALLATION OF EXTERNAL ATTACHMENT PROVISIONS AND CARGO BASKET – EUROCOPTER AS350B, B1, B2, B3, BA, D, D1; EUROCOPTER FRANCE AS355E, F, F1, F2, N, NP ISSUED TO AERO DESIGN LTD.

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are documents bearing the original Transport Canada signatures.

The transfer of these documents in the name of another person requires a prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 521.357.

To accomplish this modification, the requirements of CAR 561 apply if parts are manufactured.

Embodiment of this modification is considered to be a maintenance activity and the requirements of CAR 571.06(4) will apply.

An STC holder is required to report any service problem experienced with their product. Therefore, should you be come aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada in accordance with CAR Part V, Subpart 91. Other Obligations as a Design Approval Document Holder are contained in CAR 521, Division VIII.

Yours truly,

J./Staal

Aircraft Certification Engineering Technologist

Prairie and Northern Region

Phone: 780-495-5227 Facs: 780-495-7963

Encl.



MSI 53 - Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT - CAR 527

BLOCK 1

Name of the applicant for the design change approval:

Aero Design Ltd.

Description of the design change:

Installation of Quick Release Cargo Basket on Eurocopter AS350 & AS355 Series

Certification Basis of design change and revision date:

FAR 27, Amendment 27-20

CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:

Section 0-3 of Supplemental ICA (ICA 764.90)

Installation Drawing 76401, 77601, 78401, 78602, 78603

CAR Standard 513.05 (1) (g) (iv): Installation Instructions:

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA764.90)
A527.2 (b) Practical arrangement (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions. A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-4
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-6
A527.3 (c) Access (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-7
A527.3 (g) Special tools (g) A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 - Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for ICA ref: Eurocopter AS350/AS355 Supplemental ICA ref: Chapter 4 Continued Airworthiness consist of multiple Maintenance Manual, Chapter 4 documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard

BLOCK 4 – Applicant Statement of Compliance

that supports this change in type design.

Applicants Signature:	Date: June 23. 2010
Applicants Name: E. Burgoin, P.Eng, DAR 290M	
BLOCK 5 – Minister's Statement of Acceptability The design change is adequately supported by existing ICA and/or supplementa	al ICA, as identified above and is acceptable to the Minister.
	Jack. Staal ail: 2 tc.gc.ca Mail Routing Symbol: RAED
Signature: Date: 26 October 2010	NAPA Number
\mathcal{O}	C-10-0807

	MODIFICATION APPROV	AL R	EQUEST A	PPLICA	TION F	ORM	MOD.	764, F
1.	NAME AND ADDRESS OF APPLICANT:	2.	IDENTIFICATIO	OF PRODI	JCT			Manuel (No. 1)
	AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7	MAK	vrocopter		M	ODEL: A\$350 (all A\$355 (all		
	ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7		RAL No.: Il eligible		R	EGISTRATION All eligible		Management of
3,	REQUEST FOR:							Middensor
	A. SUPPLEMENTAL TYPE CERTIFICATE (STC)							
	B. STC/STA REVISION	\boxtimes	STC/STA No.	SH08-16	<u>_</u>	10-080	7	
	C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)				_	7 - 00 4	,	
	D. LIMITED STC/STA REVISION		LOTOLICTAN	_				
			LSTC/LSTA N	O.				
	E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE							
	F. F.A.A. STC REVISION		STC No.					
	G. FAMILIARIZATION OF F.A.A. STC		STC No.					
	H. REPAIR DESIGN APPROVAL (RDC)							
	I. PARTS DESIGN APPROVAL (PDA)							
4.	TITLE OF MODIFICATION OR REPAIR: Quick Release Cargo Basket Installation				THE RESIDENCE OF THE PERSON OF		Onto the State of Sta	3000 1000 1010
5.	BRIEF DESCRIPTION OF MODIFICATION OR REPAIR:	Kirke Service Service			1.00			special control
	Installation of external attachment provisions; Installation of cargo	basket.	Revision is to up	date mountir	ng configur	ations		
6.	APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE	(TC) DC	CUMENTS:		errorent, fudell i della difficiazione	trae water angillaren a s		Miller and a con-
	A. TA NO. H-83/H-87 B. TC No.	Ċ	C. OTHER					
7.	PROPOSED BASIS OF APPROVAL:				Outros de la companya del la companya de la company			MORNE April 4
	A. SAME AS TA 🛛 B. SAME AS TC	C	O OTHER	(Please	specify)			
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9.	APPLICANT'S REMARKS:				-			
10.	In addition to the payment of Aircraft Certification approval fees as prescribe	ed in Can	adian Aviation Redu	lations (CAR)	Section 104	Lagrae to raimb	urse Trans-	and Co
	Incremental expenses as in Aviation Regulation Directiva No. 3, or equivalent	nt, as app	licable. For further	details governi	ng cost reco	very, refer to AN	1A 513/4	VII (-8)
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Department of Transport

Supplemental Type Certificate

This approval is issued to:

Number: SH08-16

Aero Design Ltd.

Issue No.:

2013 39th Avenue North East

Approval Date: April 11, 2008

Calgary, Alberta Canada T2E 6R7

Issue Date: October 28, 2010

Responsible Office:

Prairie and Northern

Aircraft/Engine Type or Model:

EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3,

AS 350 BA, AS 350 D, AS 350 D1,

EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS

355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent:

EUROCOPTER AS 350: H-83

EUROCOPTER FRANCE AS 355: H-87

Description of Type Design Change:

Installation of External Attachment Provisions and Cargo

Basket.

Installation/Operating Data, Required Equipment and Limitations:

Configuration A - External Attachment Provisions Only:

Installation of External Attachment Provisions to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL786-1, Revision 3, dated 16 June 2010, or later approved revision.

External Attachment Provisions installed in accordance with DCL786-1 may remain installed if the basket installation is removed.

Configuration B - External Cargo Basket (Short Basket):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration B, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL776-1, Revision 3, dated 16 June 2010, or later approved revision.

...See Continuation Sheet



Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product.

> D.S. Austen For Minister of Transport

> > Canadä

(Continuation Sheet)

Number: SH08-16 Issue 3

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration C - External Cargo Basket (Short Basket - Alternate):

-Removed-

Configuration D - External Cargo Basket (Medium Basket):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration D, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL764-1, Revision 3, dated 16 June 2010, or later approved revision.

Configuration E - External Cargo Basket (Long Basket)

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration E, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL784-1, Revision 3, dated 16 June 2010, or later approved revision.

Configuration F - External Cargo Basket (Long Basket - Alternate) -Removed-

Cargo Basket Modifications:

Modifications to the Cargo Basket configurations are eligible in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL704, Revision 6, dated 29 April 2010, or later approved revision. Eligibility limitations are noted on the drawings.

Data Pertinent to All Configurations:

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS764.91, Revision 2, dated 16 June 2010, or later approved revision is required with this installation.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA764.90, Revision 3, dated 12 April 2010, or later accepted revision is required with this installation.

Basis of certification remains as defined in the applicable Type Certificate Data Sheets.

- End -

Canada

DOCUMENT NO.	DOC	UMENT CONTENT	REVISION
INSTALLATION DOCUMENTS			
78602	Attachment Provisi	ions Installation	0
78603	Attachment Provisi (Eurocopter Pod C	ions Installation ompatible)	0
ICA764.90	Instructions for Co.	ntinued Airworthiness	3
FABRICATION DOCUMENTS			
DCL786-3	Document Control	List - Provision Assembly	3
ENGINEERING DOCUMENTS			
Transport Transports Carrada Carrada AIRCRAFT CERTIFICATION	ORIGINAL DATE: 06 March 2008 REVISION DATE: 16 June 2010	AERO DESIC 2013 – 39 th Ave NE, Calgary, Ph. (403) 250-8 Fax. (403) 250-8	Alberta, T2E 6R7 3027
APPROVED By D.S. Custon Approved Approved By D.S. SHOB-16	SHEET 1 OF 1	Eurocopter AS350 & Basket Prov Installation	ision
Appr? Date 2000 - 64-11 Issue No. 3 Issue Date 2010 - 10 - 28 YY-MM-DD	DC	L786-1	Rev.

DOCUMENT NO.	DOC	UMENT CONTENT	REVISION
FABRICATION DOCUMENTS 78620 78621 78633 78634	Clamp Assembly Eurocopter Pod Co Aft Beam Fabricati Forward Beam Fab	ompatible Clamp Assembly on prication	3 0 0 0
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	77601	Quick Release Car	rgo Basket Installation	3
	ICA764.90	Instructions for Co	ntinued Alrworthiness	3
	FM\$764.91	Flight Manual Supp	plement	2
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DOCUMENT NO.	DOCL	MENT CONTENT	REVISION		
INSTALLATION DOCUMENTS		***************************************			
78401	Quick Release Care	Quick Release Cargo Basket Installation			
ICA764.90	Instructions for Con	tinued Airworthiness	3		
FMS764.91	Flight Manual Suppl	lement	2		
FABRICATION DOCUMENTS					
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Auxiliary Later Modification Open Forward End Modification (Seil 206L/407 Quick Release Only) Lid Step Modification Open Forward End Modification (Europopter ASSS9/ASSS and Bell 2083 Quick Release Only) 70407 Open Forward End Modification (Europopter ASSS9/ASSS and Bell 2083 Quick Release Only) 70407 Open Forward End Modification (Europopter EC135 Quick Release Only) Installation, Happer Wheel 70438 Forge Wheel Paris, Hanger Wheel P	70401	[Bell 206L/407 Fis	xed and McDonnell Douglas MDBDDN	
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AS350 & AS355 SERIES HELICOPTERS

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT for the INSTALLATION of the AERO DESIGN QUICK RELEASE CARGO BASKET

CARGO BASKET MODELS: 76401, 77601, 78401

TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory. Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Cargo Basket Installation and/or Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.



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IV	Performance	3
V	Weight and Balance	4
VI	Installation / removal instructions	40

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	Ву	
0	25 Feb, 2008	None			
1	29 Jan, 2010	All			
2	16 June 2010	1, 2, 4-12		:	
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I LIMITATIONS

- The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Models 764 and 784 is 250 lb. (113 kg). The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Model 776 is 300 lb. (135.7 kg).
- Only one basket may be installed on the helicopter, on the right of left side.
- Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
- 4. V_{NE} is unchanged from the basic rotorcraft.
- AS355NP only: For Category A operations, the basket must be removed. Mounting provisions may be left in place.

II NORMAL PROCEDURES

- 1. Pre-flight inspections:
 - Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - Ensure that the lid of cargo basket is closed and secured.
 - c) Ensure the basket is looked in postion on the beams. Pull up on the forward end of the basket to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

- Cruise performance and range will be reduced by approximately percent with the Cargo Basket Installed.
- AEO climb performance will be reduced by up to 150 fpm.

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WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 76401, 77601, and 78401. Each model has multiple configurations. Refer to the weight and balance information applicable to model and configuration installed.

Longitudinal and Lateral moment arms for Cargo are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

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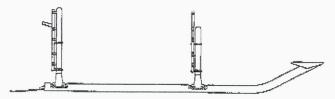
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1. Configuration 786 - Mounting Provisions Only

The following weight and balance is for the mounting provisions installed in accordance with drawing 78602 or 78603 as applicable.



Standard P/N Description Weight Longitudinal arm moment in In-lb 78602-01-01 Low Right Hand Provisions 37.2 6.4 135.6 866.0 78602-02-01 High Right Hand Provisions 6.4 135.6 866.0 36.5 Right Hand Eurocopter Ped 78603-01-01 6.8 135.4 921.0 38.8 Compatible Provisions 78602-01-02 Low Left Hand Provisions 6.4 135.6 866.0 -37.2 78602-02-02 High Left Hand Provisions 6.4 135.6 0.668 -36.5 Left Hand Eurocopter Pod 78603-01-02 6.8 135.4 921.0 -38.8 Compatible Provisions

		Metric				
P/N	Description	Weight	Long	tudinal	Lateral	
			arm	moment	arm	moment
· · · · · · · · · · · · · · · · · · ·		kg	mm	mm-kg	mm	man-ko
78602-01-01	Low Right Hand Provisions	2.9	3443.0	9970.6	944.6	2785.4
78602-02-01	High Right Hand Provisions	2.9	3443.0	9970.6	928.1	2687.6
78603-01-01	Right Hand Eurocopter Pod Compatible Provisions	3.1	3440.1	10584.8	984.6	3029.6
TO THE PARTY DOCUMENT	7100000000	THE MICHAELPARCE	TANKS.	A STATE OF THE PERSON NAMED IN		
78602-01-02	Low Left Hand Provisions	2.9	3443.0	9970.6	-944.6	-2785.4
78602-02-02	High Left Hand Provisions	2.9	3443.0	9970.6	-928.1	-2687.6
78603-01-02	Left Hand Eurocopter Pod Compatible Provisions	3.1	3440.1	10584.8	-984.6	-3029.6

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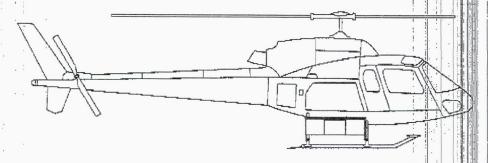
Page 5

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2. Configuration 776 (Short Basket)

The following weight and balance is for cargo baskets installed in accordance with drawing 77601.



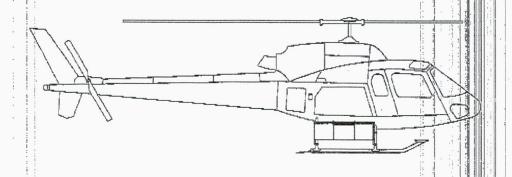
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A STATE OF THE PROPERTY AND ADDRESS OF THE PARTY AND ADDRESS OF THE PAR		71 MI 1 W W 1 W			: 4	1
P/N	Description	Weight	Longit	ludinal	Latera	.:
• :			arm	moment	arm mome	rht.
		lb	in	in-16	in in-	-lb
77601-01-01	Low Right Hand Installation	41.4	135.9	5627.5	45.9 1900	1,5
77601-02-01	High Right Hand Installation	41.4	135.9	5627.5	45 1 1868	3
77601-03-01	Eurocopter Pod Compatible Right Hand Installation	41.8	135.9	5681.0	47.8 1996	1
	Maximum Cargo (RH)	300.0	135.9	40770.0	+	*
						-
77601-01-02	Low Left Hand Installation	41.4	135.9	5627.5	45.9 4900	.5
77601-02-02	High Left Hand Installation	41.4	135.9	5627.5	-45 1 -1868	3
77601-03-02	Eurocopter Pod Compatible Left Hand Installation	41.8	135.9	5681.0	-47.8 -1996	1
:	Maximum Cargo (LH)	300.0	135.9	40770.0		F .

*Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

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Metric

: 1		MACHIN			1: 4 12	# 41 1 : 1
P/N	Description	Weight	Long	itudinal	Later	alli
			arm	moment	arm	moment
		kg	गाःमा	mm-kg	mm	mm-kg
77601-01-01	Low Right Hand Installation	18.7	3452.6	5627.5	1166.0	21842.9
77601-02-01	High Right Hand Installation	18.7	3452.6	5627.5	1146.3	21473.2
77601-03-01	Eurocopter Pod Compatible Right Hand Installation	18.9	3452.6	5681.0	1212.9	22941.6
	Maximum Cargo (RH)	135.7	3452.6	468768.7		A CONTRACTOR OF THE CONTRACTOR
	MANAGE COMPANIES AND			THE THE STATE OF STREET STATE		The state of the s
77601-01-02	Low Left Hand Installation	18.7	3452.6	5627.5	-1166.0	-21842.9
77601-02-02	High Left Hand Installation	18.7	3452.6	5627.5	-1146.3	21473.2
77601-03-02	Eurocopter Pod Compatible Left Hand Installation	18.9	3452.6	5681.0	-1212.9	-22941.6
1	Maximum Cargo (LH)	135.7	3452.6	468768.7	1 • 1	*

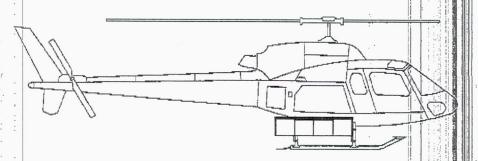
*Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

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Configuration 764 (Medium Basket)

The following weight and balance is for cargo baskets installed in accordance with drawing 76401.

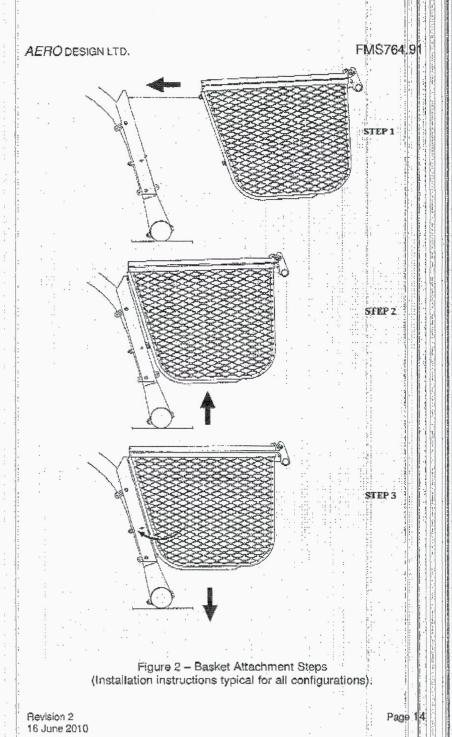


Standard

P/N	Description	Weight	Longi	ludinal	Lateral
1			mrs	moment	arm moment
:		lb lb	in	in-lb	in in-th
76401-01-01	Low Right Hand Installation	51.4	144.0	7401.5	46.7 2402.5
76401-02-01	High Right Hand Installation	51.4	144.0	7401.5	46.0 2362.3
76401-03-01	Eurocopter Pod Compatible Right Hand Installation	51.8	143.9	7455.0	48.6 2518.1
:	Maximum Cargo (RH)	250.0	144.0	36000.0	
:					
76401-01-02	Low Left Hand Installation	51.4	144.0	7401.5	-46.7 -2402.5
76401-02-02	High Left Hand Installation	51.4	144.0	7401.5	-46.0 -2362.3
76401-03-02	Eurocopter Pod Compatible Left Hand Installation	51.8	143.9	7455.0	-48.6 -2518.1
:	Maximum Cargo (LH)	250.0	144.0	36000.0	*

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

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- 2. Removal Refer to Figure 1 and Figure 2.
 - a) Pull knob at bottom end of forward beam and lift basket until attachment fittings are free of keyways.
 - b) Rotate basket up until lower aft attachment fitting is free of keyway. Rest forward end of basket on floor.
 - c) Slide basket forward and raise basket until upper aft attachment fitting is free of keyway.

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VI INSTALLATION / REMOVAL INSTRUCTIONS

Cargo Baskets

The beams are installed in accordance with drawing 78602 or 78603 as applicable. The basket is installed in accordance with drawing 76401, 77601 or 78401, as applicable. Removal of the basket leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket and which weight and balance amendment is in effect is required when basket is installed or removed.

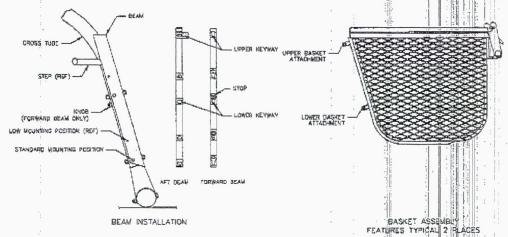
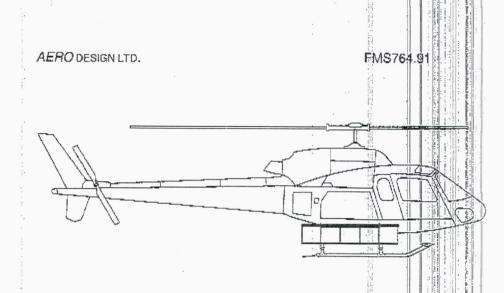


Figure 1 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical for low and high beam installations)

- 5. Installation Refer to Figure 1 and Figure 2.
 - Set basket upper aft basket attachment into upper keyway in aft beam.

 Forward end of basket may rest on floor.
 - b) Lift basket from forward end, slide lower aft attachment into keyway on aft beam.
 - At forward attachment hoop, lift basket until lower attachment fitting hits stop.
 - d) Push fitting into keyway and slide basket down until locked.

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		Metric	:	Ĥ	
P/N	Description	Weight	Long	itudinal	Lateral
1			arm	moment	arm moment
TOTAL CONTRACTOR CONTR		kg	mm	mm-kg	mm mm-kg
78401-01-01	Low Right Hand Installation	28.9	3453.3	99847.5	1203.1 34787.1
78401-02-01	High Right Hand Installation	28.9	3453.3	99847.5	1183.2 34210.6
78401-03-01	Eurocopter Pod Compatible Right Hand Installation	29.1	3452.9	100461.7	1251.2 36403.3
:	Maximum Cargo (RH)	113.1	3453.3	390568.2	i i i i i i i i i i i i i i i i i i i
:					
78401-01-02	Low Left Hand Installation	28.9	3453.3	99847.5	-1203.1 -34787.1
78401-02-02	High Left Hand Installation	28.9	3453.3	99847.5	-1183.2 -34210.6
78401-03-02	Eurocopter Pod Compatible Left Hand Installation	29.1	3452.9	100461.7	- 1251.2 - 36403.3
	Maximum Cargo (LH)	113.1	3453.3	390568.2	*

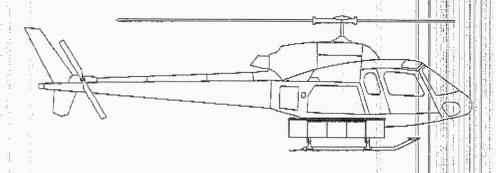
*Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

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4. Configuration 784 (Long Basket).

The following weight and balance is for cargo baskets installed in accordance with drawing 78401.



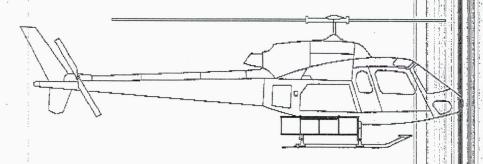
Standard

		The state of amountained after			11 11 11 11 11 11 11 11 11 11 11 11 11
P/N	Description	Weight	Longi	tudinal	Lateral
			arm	moment	arın moment
		lb	in	in-lb	in lin lib
78401-01-01	Low Right Hand Installation	63.9	136.0	8687.5	47.4 3026.8
78401-02-01	High Right Hand Installation	63.9	136.0	8687.5	46.6 2976.6
78401-03-01	Eurocopter Pod Compatible Right Hand Installation	64.3	135.9	8741.0	49.3 31.67.4
:	Maximum Cargo (RH)	250.0	136.0	34000.0	
				1:	
78401-01-02	Low Left Hand Installation	63.9	136.0	7401.5	-47.4 -3026.8
78401-02-02	High Left Hand Installation	63.9	136.0	7401.5	-46.6 -2976.6
78401-03-02	Eurocopter Pod Compatible Left Hand Installation	64.3	135.9	7455.0	-49.3 -31167.4
Ï J	Maximum Cargo (LH)	250.0	136.0	34000.0	

*Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

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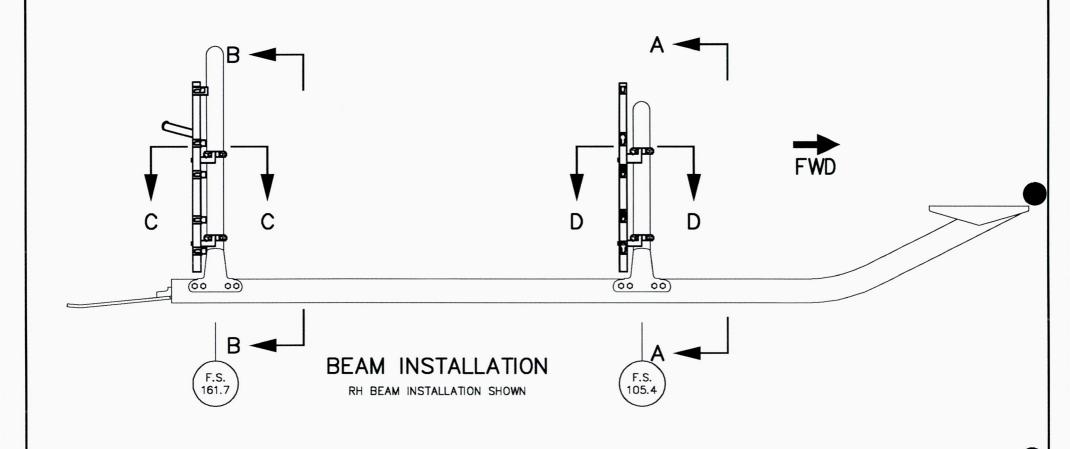


Metric

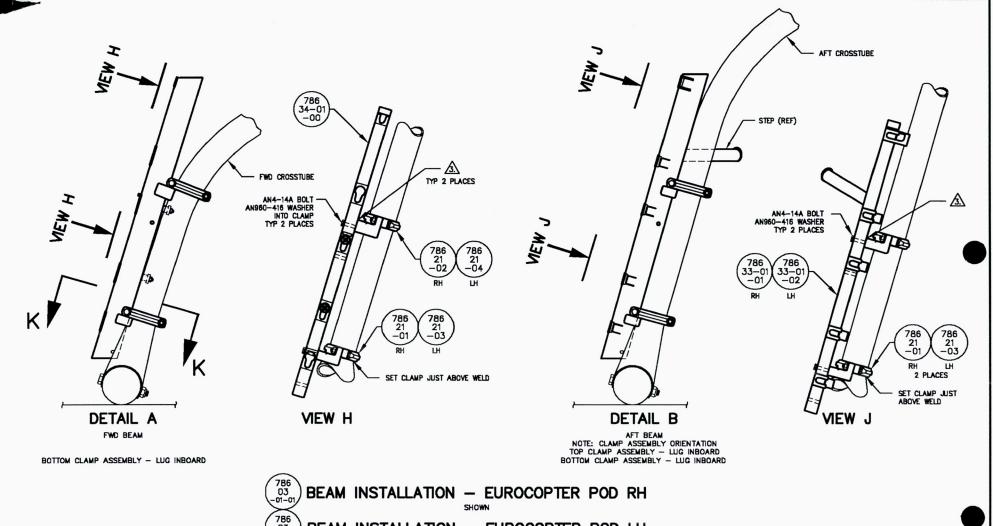
		MICHILL			11 E . 7 d 41 68 41	# P.O.
P/N	Description	Weight	Long	itudinal :	Latera	1
			arm	moment	arm	ment
		kg	mm	mm-kg	mm	mm-kg
76401-01-01	Low Right Hand Installation	23.3	3657.6	85067.2	1187.2	812.4
76401-02-01	High Right Hand Installation	23.3	3657.6	85067.2	1167.4	7150.9
76401-03-01	Eurocopter Pod Compatible Right Hand Installation	23.4	3655.5	85681.4	1234.7	8941.1
İ	Maximum Cargo (RH)	113.1	3657.6	413674.6		-
76401-01-02	Low Left Hand Installation	23.3	3657.6	85067.2	-1187.2 -2	7612.4
76401-02-02	High Left Hand Installation	23.3	3657.6	85067.2	-1167.4 -2	150.9
76401-03-02	Eurocopter Pod Compatible Left Hand Installation	23.4	3655.5	85681.4	-1234.7	941.1
i	Maximum Cargo (LH)	113.1	3657.6	413674.6		-

*Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

Revision 2 16 June 2010



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——————————————————————————————————————	CHECKED: E. BURGOIN		2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6: tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign				
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BEAM INSTALLATION - EUROCOPTER POD LH

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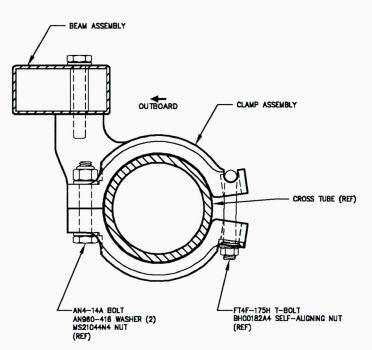
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EUROCOPTER AS350 & AS355 SERIES EUROCOPTER POD COMPATIBLE ATTACHMENT PROVISIONS INSTALLATION

SCALE 1 : 8	DWG. SIZE	DWG. NO.	REV.		
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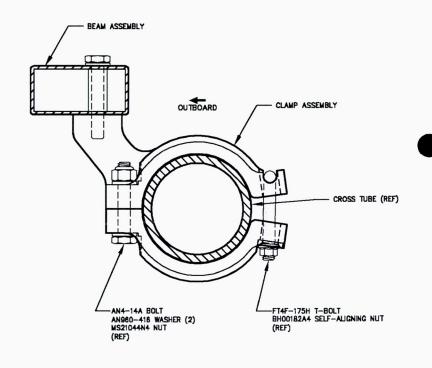
LOCATION: UPPER AFT LOWER AFT LOWER FORWARD



DETAIL C

CLAMP ORIENTATION
RH SIDE SHOWN, LH SIDE OPPOSITE
SCALE: 1:2

LOCATION: UPPER FORWARD



DETAIL D

CLAMP ORIENTATION
RH SIDE SHOWN, LH SIDE OPPOSITE
SCALE: 1:2

APPROVALS	DATE			
DRAWN: JEFF CLARKE	23 APR 2010			
CHECKED: E. BURGOIN				

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EUROCOPTER AS350 & AS355 SERIES EUROCOPTER POD COMPATIBLE ATTACHMENT PROVISIONS INSTALLATION

DWG. NO.

SCALE 1 : 8 SHEET 3 OF 4 $\mathbf{A4}$

78603

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REV.

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE - CREATED FROM 78601		

NOTES:



ATTACHMENT OF ANY EQUIPMENT TO EXTERNAL ATTACHMENT PROVISIONS REQUIRES TRANSPORT CANADA APPROVAL.

2. TORQUE AN4 BOLTS TO 50-70 INCH-POUNDS.

3 SHIM USING COMMERCIAL 1/4" STAINLESS STEEL FENDER WASHERS IF REQUIRED. REFER TO ICA764.90 FOR INSTRUCTIONS.

- 4. REFER TO ICA764.90 FOR WEIGHT AND BALANCE INFORMATION.
- 5. THIS CONFIGURATION IS REQUIRED ON HELICOPTERS THAT HAVE BEEN MODIFIED WITH EUROCOPTER SIDE BAGGAGE COMPARTMENT EXTENDER.
 THIS CONFIGURATION IS OPTIONAL ON HELICOPTERS THAT DO NOT HAVE SIDE BAGGAGE COMPARTMENT EXTENDER.
 THIS CONFIGURATION IS OPTIONAL ON HELICOPTERS THAT HAVE BEEN MODIFIED WITH DART SIDE BAGGAGE COMPARTMENT EXTENDER.

A/R	A/R	1/4 STAINLESS STEEL FENDER WASHER					
4	4	AN4-14A		BOLT			
1		78633-01-02	80	AFT BEAM ASSEMBLY (LEFT HAND)			
	1	78633-01-01	07	AFT BEAM ASSEMBLY (RIGHT HAND)			
1	1	78634-01-00	06	FORWARD BEAM ASSEMBLY			
1		78621-04	05	CLAMP ASSEMBLY (LH)			
3		78621-03	04	CLAMP ASSEMBLY (LH)			
	1	78621-02	03	CLAMP ASSEMBLY (RH)			
	3	78621-01	02	CLAMP ASSEMBLY (RH)			
		78602-01-02	01	BEAM INSTALLATION - LH EUROCOPTER POD			
		78602-01-01	01	BEAM INSTALLATION - RH EUROCOPTER POD			
-01-02	-01-01	PART NO.	ITEM	DESCRIPTION			
QTY	QTY	LIST OF MATERIALS					

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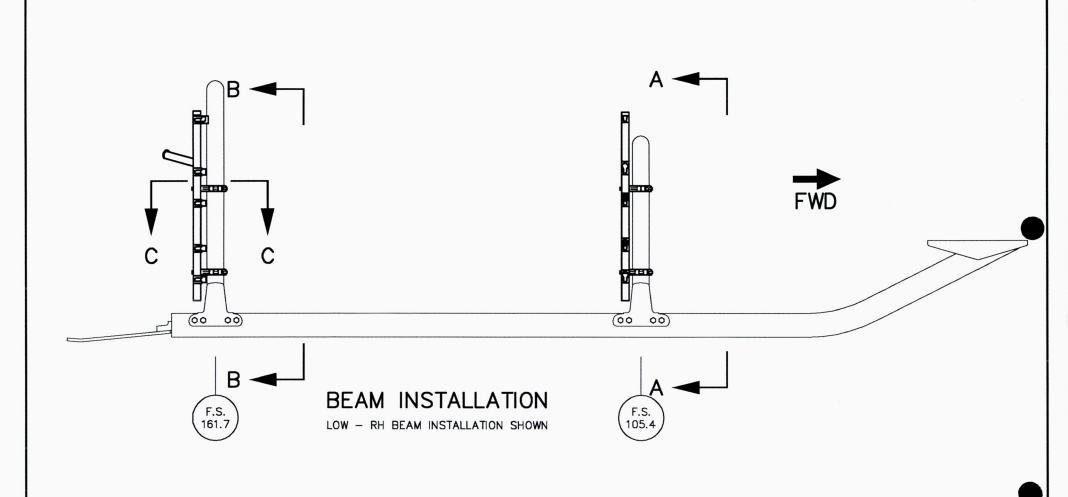
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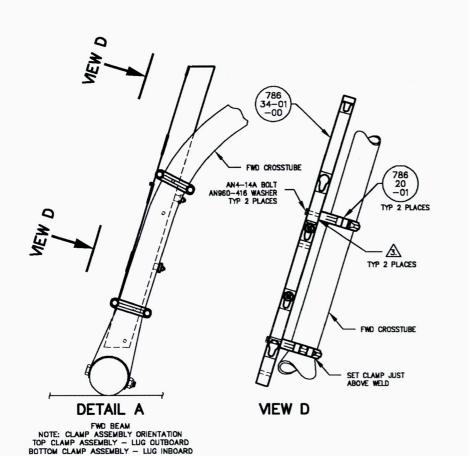
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EUROCOPTER AS350 & AS355 SERIES EUROCOPTER POD COMPATIBLE ATTACHMENT PROVISIONS INSTALLATION

SCALE 1 : 8 SHEET 4 OF 4 A4 78603 REV.



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NOTICE —— NOTICE —— NOTICE — N	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES		EUROCOPTER AS350 & AS355 SERIES ATTACHMENT PROVISIONS INSTALLATION				5
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AFT CROSSTUBE STEP (REF) 786 20 -01 TYP 2 PLACES AN4-14A BOLT AN960-416 WASHER TYP 2 PLACES SET CLAMP JUST ABOVE WELD VIEW E **DETAIL B**

AFT BEAM
NOTE: CLAMP ASSEMBLY ORIENTATION
TOP CLAMP ASSEMBLY LUG INBOARD
BOTTOM CLAMP ASSEMBLY – LUG INBOARD

BEAM INSTALLATION - LOW RH

BEAM INSTALLATION - LOW LH

APPROVALS DATE DRAWN: JEFF CLARKE 23 APR 2010 CHECKED: E. BURGOIN

> UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:

DECIMALS ANGLES ±1/2° $X.XXX \pm 0.010$

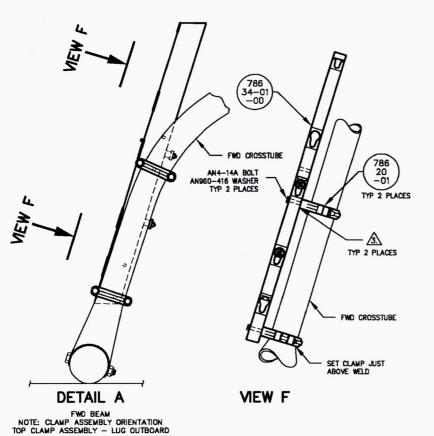
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EUROCOPTER AS350 & AS355 SERIES ATTACHMENT PROVISIONS INSTALLATION

DWG. SIZE DWG. NO. REV. SCALE 1: 8 78602 0 SHEET 2 OF 5



AFT CROSSTUBE STEP (REF) 786 20 -01 TYP 2 PLACES AN4-14A BOLT AN960-416 WASHER TYP 2 PLACES SET CLAMP JUST ABOVE WELD VIEW G **DETAIL**

AFT BEAM
NOTE: CLAMP ASSEMBLY ORIENTATION
TOP CLAMP ASSEMBLY - LUG INBOARD BOTTOM CLAMP ASSEMBLY - LUG INBOARD

BOTTOM CLAMP ASSEMBLY - LUG INBOARD

BEAM INSTALLATION - HIGH RH

BEAM INSTALLATION - HIGH LH

APPROVALS	DATE		
DRAWN: JEFF CLARKE	23 APR 2010		
CHECKED: E. BURGOIN			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:

DECIMALS

ANGLES ±1/2° $X.XXX \pm 0.010$

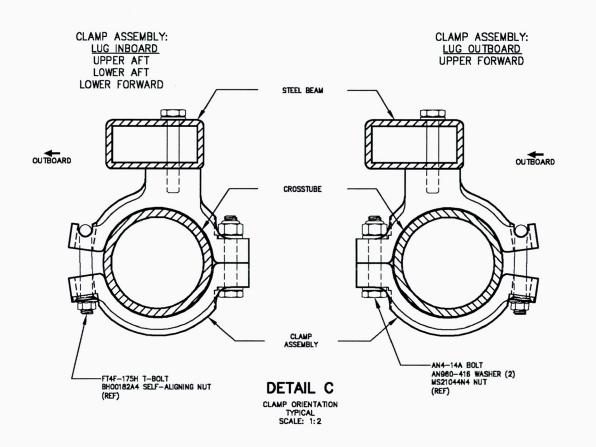
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EUROCOPTER AS350 & AS355 SERIES ATTACHMENT PROVISIONS INSTALLATION

DWG. SIZE DWG. NO. REV. SCALE 1:8 78602 0 SHEET 3 OF 5



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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE - CREATED FROM 78601		

NOTES:



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3. SHIM USING COMMERCIAL 1/4" STAINLESS STEEL FENDER WASHERS IF REQUIRED. REFER TO ICA764.90 FOR INSTRUCTIONS.

- 4. REFER TO ICA764.90 FOR WEIGHT AND BALANCE INFORMATION.
- 5. CONFIGURATION 78602-01-XX IS REQUIRED IF HELICOPTER IS FITTED WITH DART SIDE BAGGAGE COMPARTMENT EXTENDER (SQUIRREL CHEEKS). EITHER CONFIGURATION MAY BE INSTALLED IF HELICOPTER IS NOT FITTED WITH SIDE BAGGAGE COMPARTMENT EXTENDER. REFER TO DRAWING 78603 IF HELICOPTER IS FITTED WITH EUROCOPTER SIDE BAGGAGE COMPARTMENT EXTENDER.

A/K	A/K	A/K	A/K			1/4 STAINLESS STEEL FENDER WASHER
4	4	4	4	AN4-14A		BOLT
1		1		78633-01-02	06	AFT BEAM ASSEMBLY (LEFT HAND)
	1		1	78633-01-01	05	AFT BEAM ASSEMBLY (RIGHT HAND)
1	1	1	1	78634-01-00	04	FORWARD BEAM ASSEMBLY
4	4	4	4	78620-01	03	CLAMP ASSEMBLY
				78602-02-02	02	BEAM INSTALLATION - HIGH LH
				78602-02-01	02	BEAM INSTALLATION - HIGH RH
				78602-01-02	01	BEAM INSTALLATION - LOW LH
				78602-01-01	01	BEAM INSTALLATION - LOW RH
-02-02	-02-01	-01-02	-01-01	PART NO.	ITEM	DESCRIPTION
QTY	QTY	QTY	QTY		LIS	T OF MATERIALS

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DECIMALS ANGLES X.XXX ± 0.010 $\pm 1/2^{\circ}$ X.XX ± 0.03

 ± 0.1

X.X

SCALE 1 : 8 DWG. SIZE SHEET 5 OF 5 $\mathbf{A4}$

tel: (403) 250-8027

EUROCOPTER AS350 & AS355 SERIES
ATTACHMENT PROVISIONS
INSTALLATION

AERO DESIGN LTD.

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fax: (403) 250-8333

78602 REV.

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STATEMENT OF COMPONENTS \ Aircraft Mfr: Aircraft Model:		E OF AIRC RWORTHIN	ISPORT RAFT OR AIRCRA ESS REQUIREME Model / Typ Airplane Helicopter Appliance Component	NTS	AE-100 No.: Initial Issue Date: Revision: Revision Date: Approval No.: Delegation No.: Delegate Name: Company:	3 17 Se SH08- 290M E. Bui	ptember 2010 -16
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STATEMENT OF		E OF AIRC	ISPORT RAFT OR AIRCRAFT ESS REQUIREMENTS	AE-100 No.: Initial Issue Date: Revision: Revision Date:	3	4-3 arch, 2008 ptember 2010		
Aircraft Mfr: Aircraft Model: Registration:	Eurocopter AS350 & AS3 ALL ELIGIBLE		Model / Type Airplane Helicopter Appliance	Approval No.: Delegation No.: Delegate Name: Company:	SH08- 290M E. Bui			
			Component	Gompany.	ABAG	Design Eta.		
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STATEMENT OF		E OF AIRC	ISPORT RAFT OR AIRCRAFT ESS REQUIREMENTS	AE-100 No.: Initial Issue Date: Revision: Revision Date:	3	6-1 irch, 2008 ptember 2010
Aircraft Model:	Eurocopter AS350 & AS3 ALL ELIGIBLI		Model / Type Airplane	Approval No.: Delegation No.: Delegate Name: Company:	SH08- 290M E. Bui AERO	
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Aircraft Mfr:	Eurocopter		Model / Type	Approval No.:	SH08			
Aircraft Model: Registration:	AS350 & AS3 ALL ELIGIBLI		Airplane	Delegation No.: Delegate Name: Company:	290M E. Bui AERO			
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STATEMENT OF		E OF AIRC	ISPORT RAFT OR AIRCRAFT ESS REQUIREMENTS	AE-100 No.: Initial Issue Date: Revision: Revision Date:	3	4-1 arch, 2008 ptember 2010		
Aircraft Mfr:	Eurocopter		Model / Type	Approval No.:	SH08	-16		
	AS350 & AS3 ALL ELIGIBLI		Airplane	Delegation No.: Delegate Name: Company:	290M E. Bu AERO			
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STATEMENT OF		E OF AIRC	ISPORT RAFT OR AIRCRAFT ESS REQUIREMENTS	AE-100 No.: Initial Issue Date: Revision: Revision Date:	3	1-3 rch, 2008 ptember 2010		
Aircraft Mfr: Aircraft Model: Registration:	Eurocopter AS350 & AS3 ALL ELIGIBLI		Model / Type Airplane	Approval No.: Delegation No.: Delegate Name: Company:	SH08- 290M E. Bur AERO			
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				AE-100 No.:	AE786	5-1
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			ESS REQUIREMENTS	Revision: Revision Date:	3 17 Se	ptember 2010
Aircraft Mfr:	Eurocopter		Model / Type	Approval No.:	SH08-	-16
	AS350 & AS3 ALL ELIGIBLE		Airplane	Delegation No.:	290M	
			Helicopter Appliance	Delegate Name: Company:	E. Bui	goin Design Ltd.
			Component			
		LI	ST OF APPROVED REPO	RTS AND DATA		
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						CP764, Revision 0
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COMPONENTS	VVITH THE AIR	RWORTHIN	ESS REQUIREMENTS	Revision Date:	17 Se	ptember 2010
Aircraft Mfr:	Eurocopter		Model / Type	Approval No.:	SH08	-16
Aircraft Model: Registration:	AS350 & AS3 ALL ELIGIBL		Airplane	Delegation No.:	290M	
			Helicopter 🖂 Appliance	Delegate Name: Company:	E. Bui	rgoin Design Ltd.
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Document	Revision		Docum	ent Title		Compliance
Number						Status
DCL786-3 ER764.05	3 0		t Control List and all docum ng Report	nents referred to therein		As per Compliance
78620	3	Clamp As	sembly	and the second s		Program,
78621 78633	0	Aft Beam	er Pod Compatible Clamp A Fabrication	Assembly		CP764,
78634	0	Forward B	Beam Fabrication			Revision 0
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS			
76401	Quick Release Carg	go Basket Installation	3
ICA764.90	Instructions for Con	tinued Airworthiness	3
FMS764.91	Flight Manual Supplement		2
FABRICATION DOCUMENTS	i.		
DCL764-3	Document Control L	ist - Basket Assembly	3
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ENGINEERING DOCUMENTS			
APPROVAL:	ORIGINAL DATE: 06 March 2008 REVISION DATE:	AERO DESIGN 2013 – 39 th Ave NE, Calgary, All Ph. (403) 250-802	berta, T2E 6R7
	16 June 2010	Fax. (403) 250-833	
	SHEET 1 OF 1	Eurocopter AS350 & A Medium Quick Ro Cargo Basket Inst	elease
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
FABRICATION DOCUMENTS 76410 76411 69812 76421 76422 76423 76427 69823 69824 49212 49213 49215 49216 84255 84261 84262 84265 84267 84272 36273 36274 36275 36277 36278 36280	Basket Assembly Basket Body Assembly Lid Assembly Hoop Hoop Assembly Placard Lug Rim Rim Lid Brace Spacer Spacer Handle Assembly Handle Bar Assembly Handle Bracket Assembly Handle Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly		2 2 2 0 0 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0
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	SHEET 1 OF 1	Eurocopter AS350 & A Quick Release Carg Basket Assem	o Basket
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS			
77601	Quick Release Carg	go Basket Installation	3
ICA764.90	Instructions for Con	tinued Airworthiness	3
FMS764.91	Flight Manual Supp	lement	2
FABRICATION DOCUMENTS			
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FABRICATION DOCUMENTS 77610 77611 77612 76421 76422 77627 69823 49215 49216 84255 84261 84262 84262 84265 84267 84272 36273 36274 36275 36277 36278 36280	Basket Assembly Basket Body Assen Lid Assembly Hoop Hoop Assembly Placard Lug Spacer Spacer Handle Bar Assembly Handle Bracket Assemble Handle Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly	oly	1 1 1 0 0 0 0 0 0 0 0 0 0 0 1 2 3 0 2 2
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	SHEET 1 OF 1	Eurocopter AS350 & A Quick Release Carg Basket Assem	o Basket
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS			
78401	Quick Release Carç	go Basket Installation	3
ICA764.90	Instructions for Con	tinued Airworthiness	3
FMS764.91	Flight Manual Supp	lement	2
FABRICATION DOCUMENTS			
DCL784-3	Document Control L	ist - Basket Assembly	3
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ENGINEERING DOCUMENTS			
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	REVISION DATE: 16 June 2010	Ph. (403) 250-802 Fax. (403) 250-833	7
		Eurocopter AS350 & A	S355 Series
	SHEET 1 OF 1	Quick Release Carg Installation	o Basket
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	DC	L784-1	2
	DC	L/04-1	3



DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
FABRICATION DOCUMENTS 78410 78411 78412 76421 76422 76423 78427 69823 49215 49216 84255 84261 84262 84262 84265 84267 84272 36273 36274 36275 36277 36278 36280	Basket Assembly Basket Body Assembly Lid Assembly Hoop Hoop Assembly Placard Lug Spacer Spacer Handle Assembly Handle Bar Assembly Handle Bracket Assembly Handle Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly		1 2 1 0 0 2 1 1 0 0 0 0 0 0 0 0 0 1 2 3 0 2 2
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS			
78602	Attachment Provisions Installation		0
78603	Attachment Provision (Eurocopter Pod Co		0
ICA764.90	Instructions for Continued Airworthiness		3
FABRICATION DOCUMENTS			
DCL786-3	Document Control L	ist - Provision Assembly	3
ENGINEERING DOCUMENTS			
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	REVISION DATE: 16 June 2010	2013 – 39 th Ave NE, Calgary, All Ph. (403) 250-802 Fax. (403) 250-833	7
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	DC	L786-1	3



DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
FABRICATION DOCUMENTS 78620 78621 78633 78634	Clamp Assembly Eurocopter Pod Co Aft Beam Fabricatic Forward Beam Fab		3 0 0
ENGINEERING DOCUMENTS ER764.01 TR764.02 FTP764.03 ER764.04 ER764.05	Engineering Report Load Test Plan/Report Flight Test Plan/Report Engineering Report Engineering Report		0 0 0 0
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	DC	L786-3	3

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUI	MENT CONTENT	REVISION
FABRICATION DOCUMENTS			
70401	(Bell 206L/407 Fixed	Open Forward End Modification (Bell 206L/407 Fixed and McDonnell Douglas MD600N Quick Release Only)	
70402	Lid Door Modification	Lid Door Modification	
70403	Auxiliary Latch Modif	cation	3
70404	Open Forward End M (Bell 206L/407 Quick		1
70405	Lid Step Modification		2
70406	Open Forward End N (Eurocopter AS350/A Release Only)	Modification AS355 and Bell 206B Quick	1
70407	Open Forward End N (Eurocopter EC135 C		0
70408 70428 70438	Installation, Hanger V Assembly, Hanger W Parts, Hanger Whee	/heel	0 0
ENGINEERING DOCUMENTS ER704.02	Engineering Report		0
E GLEGGER DARSONE	ORIGINAL DATE: 10 May 2006 REVISION DATE: April 29, 2010	AERO DESIG 2013 – 39 th Ave NE, Calgary, A Ph. (403) 250-80 Fax. (403) 250-83	lberta, T2E 6R7 27
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Issue No Z Issue Date ZZ May 2010 THIS DCL APPROVED 29 APP 2010	DO	CL704	Rev.

MSI 53 - Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT - CAR 527

BLOCK 1

Name of the applicant for the design change approval:

Aero Design Ltd.

Description of the design change:

Installation of Quick Release Cargo Basket on Eurocopter AS350 & AS355 Series

Certification Basis of design change and revision date:

FAR 27, Amendment 27-20

CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:

Section 0-3 of Supplemental ICA (ICA 764.90)

CAR Standard 513.05 (1) (g) (iv): Installation Instructions:

Installation Drawing 76401, 77601, 78401, 78602, 78603

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA764.90)
A527.2 (b) Practical arrangement (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions. A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-4
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-6
A527.3 (c) Access (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-7
A527.3 (g) Special tools (g) A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

MSI 53 - Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

be included in the Supplemental instructions for Continue	u All Worthiness.				
A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4			
BLOCK 4 – Applicant Statement of Compliance					
The Supplemental ICA referenced above comprises that supports this change in type design. Applicants Signature:	the complete listing of supplemental ICA necess	Date:June 23, 2010			
Applicants Name: E. Burgoin, P.Eng, DAR 290M					
BLOCK 5 – Minister's Statement of Acceptability					
The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.					
Reviewer's Name: Phone #	Email: M	ail Routing Symbol:			
Signature: Date:		NAPA Number			

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 764.90

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE CARGO BASKET

MODELS: 764, 776 AND 784



TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Cargo Basket installed in accordance with AERO Design Ltd. Document Control Lists:

- DCL764-1 (for Installation 76401), Revision 3,
- DCL776-1 (for Installation 77601), Revision 3,
- DCL784-1 (for Installation 78401), Revision 3,
- DCL786-1 (for mounting provision), Revision 3, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 3 Date: 12 April, 2010

<u>AERO Design Ltd.</u> Engineering Consultants 2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7

Phone: (403) 250-8027 Fax: (403) 250-8333

E-Mail: info@aerodesign.ca

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	Ву
0	25 February 2008		Original Issue
1	24 June, 2009		
2	22 December 2009		
3	12 April 2010		

LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue)	25 February, 2008
	Revision 1	24 June, 2009
	Revision 2	22 December, 2009
	Revision 3	12 April, 2010

List of Effective Pages

Description	<u>Pages</u>	Revision No.
Cover	1	3
Revision Record/List of Effective Pages	2	3
Table of Contents	3	2
00-00-00	4-5	0
04-00-00	6	1
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ICA 764.90 AERO Design Ltd.



0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Cargo Basket as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA -Instructions for Continued Airworthiness

LH -Left Hand

Right Hand RH -

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Cargo Basket. Requests for a copy may be made in writing to:

AERO Design Ltd. 2013 39th Avenue N.E. Calgary, Alberta T2E 6R7

Fax: 403-250-8333

Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

Revision 0 00-00-00

0-5 GENERAL DESCRIPTION

The cargo basket installation is a metal mesh basket installed to the side of the helicopter on beams attached to the landing gear cross tubes. The quick release basket allows for the installation and removal of the basket without tools, leaving the mounting beams in place.

The basket itself is made of a steel welded tubing structure, and lined with expanded steel mesh. The basket has a hinged lid with a self-locking handle.

The beams consist of a steel tube bolted to a clamp on the cross-tube. The quick release mechanism is built into the steel tube.

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Cargo Basket.

Revision 1 04-00-00

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Cargo Basket.

Daily Inspection

- 1. Inspection Area: Basket
 - a) Inspect the basket attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.
 - b) Inspect latching of the lid for correct operation. If basket is bent inward the lid will close but may not latch.

300 Hour or Annual Inspection

- 1. Inspection Area: Basket
 - a) Visually inspect tube-to-tube welds and mesh-to-tube welds for cracks, corrosion or other damage.
 - b) Visually inspect basket mesh for damage.
- 2. Inspection Area: Beams

With the basket removed:

- a) Visually inspect beams and clamps attaching basket to the helicopter for cracks, corrosion or other damage.
- b) Visually inspect lugs attaching the basket to the beams for security and damage.
- c) Visually inspect bolts attaching beams to clamps and clamps to cross tubes for condition and security.
- d) Visually inspect peg step on aft beam for crack corrosion or other damage. Inspect grip surface on top of peg for condition.

Special Inspections

- 1. Following a hard landing inspect the Quick Release Cargo Basket installation in accordance with the 300 hour or annual inspection listed above.
- Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

Revision 3 **05-00-00**

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Basket

a) Repair Basket in accordance with AC43.13-1B, Chapter 4, Section 5, Welding, as required.

b) Basket is fabricated from the following materials:

Attachment Hoops:

1" square steel tube and/or 1/2" square steel tube

Lid and Rim:

3/4" square steel tube

Frames:

1/2" square steel tube

Mesh:

3/4" 16 ga. (0.040") expanded steel mesh

c) Touch up with polyurethane paint as required following repairs.

2. Steel Beams

DO NOT REPAIR DAMAGE TO BEAMS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on any face up to 0.015" deep and 0.125" wide may be dressed out to a smooth contour.
- b) Critical keyway dimensions are shown in Figure 5.1. Attempt to insert 15/32 drill shank into bottom end of keyway. If drill can be inserted, slot is worn beyond limit.

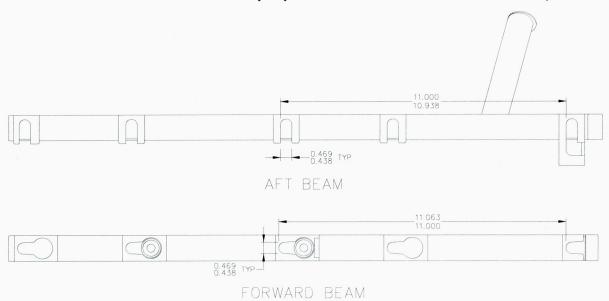


Figure 5.1 – Critical Keyway Dimensions

- c) Touch up with polyurethane paint as required following repairs.
- d) Aft beam only: Grip surface on top of peg step has 1" wide 3M Safetywalk grip tape, or equivalent, on the top surface. Alternatively, it may be painted with Randolph X1567 WingWalk grip paint or equivalent.

3. Aluminum Clamps

DO NOT REPAIR DAMAGE TO CLAMPS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on the top or bottom surface up to 0.060" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 5.2.
- b) Nicks and/or gouges on the outer edge up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 5.2.
- c) Any cracking on any surface is unacceptable.
- d) Touch up with polyurethane paint as required following repairs.

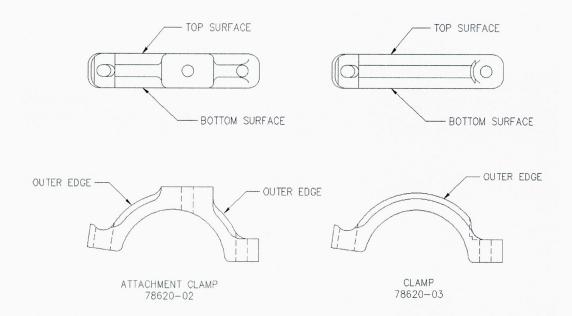


Figure 5.2 – Aluminum Clamps (78620-01 shown, 78621-XX similar)

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

1/4-28 insert: 3591-4CN375

ICA 764.90 AERO Design Ltd.

5-3 PROTECTIVE TREATMENT INFORMATION

1. Beams

The steel tubes are supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

Aft beam only: the peg step has a 1" wide strip of 3M SafetyWalk grip tape applied to the top surface. If the grip tape is damaged it may be replaced with equivalent grip tape or may be painted with Randolph X1567 WingWalk grip paint.

2. Clamps

The aluminum clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

3. Cargo Basket

The cargo basket is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

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CHAPTER 11 – MARKINGS AND PLACARDS

The following markings and placards are used with the Quick Release Cargo Basket Installation in the locations noted:

a) Located on basket lid:



PLACARD FOR 77601 BASKET INSTALLATION



PLACARD FOR 76401 BASKET INSTALLATION



PLACARD FOR 78401 BASKET INSTALLATION

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

SECTION 50 - CARGO COMPARTMENTS

The Quick Release Cargo Basket Installation may be applied to the right or left side of the helicopter.

25-1 BEAMS INSTALLATION

Refer to section 25-6 for part numbers.

The HIGH beam mounting position (configuration 78602-02-XX) is standard and uses the LOWER set of holes in the beams. The LOW beam mounting position (configuration 78602-01-XX) is required if the helicopter is fitted with cargo compartment extenders ("squirrel cheeks"), and uses the UPPER set of holes in the beams.

Installation pictures show LEFT SIDE, HIGH mounted installation.

 Position two (2) Clamp Assemblies 78620-01 around each cross tube. Fasten clamps using one AN4-14A Bolt, two (2) AN960-416 Washers and MS21044N4 Nut through one side of the Clamp Assembly and one FT4F-175H T-Bolt and BH00182A4 Self-Aligning Nut through the other side of the Clamp Assembly. Fully torque AN4-14A bolt, do not tighten T-Bolt.

Note orientation (refer to figure 25.1 thru 25.3):

Forward – Top:

Lug Outboard

Forward – Bottom:

Lug Inboard

Aft – Top:

Lug Inboard

Aft – Bottom:

Lug Inboard

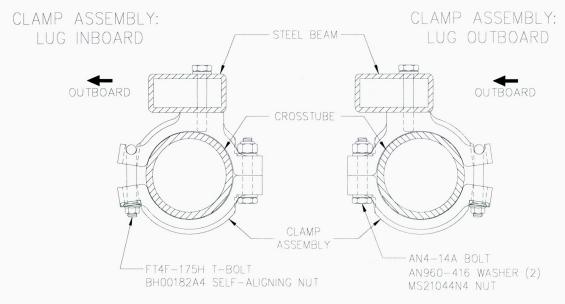


Figure 25.1 – Beam Installation – Clamp Detail

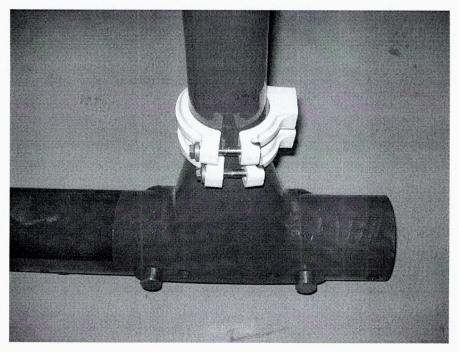


Figure 25.2 – Aft Cross Tube Clamps

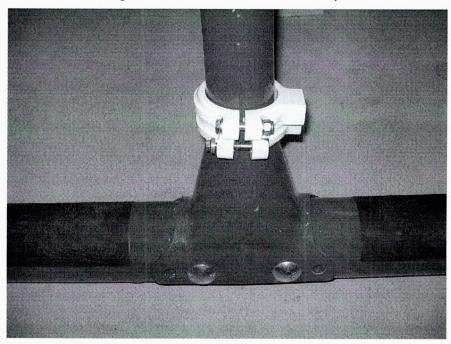


Figure 25.3 – Forward Cross Tube Clamps

2. Attach Forward Beam Assembly to Clamp Assemblies on forward cross tube with two (2) AN4-14A Bolts and two (2) AN960-416 Washers. Locate clamps on LOWER set of holes in beam for HIGH installation, or UPPER set of holes for LOW installation. Do not fully tighten bolts. Position beam so that the bottom clamp is slightly above the weld at the bottom of the cross tube. Tighten clamp bolts enough to prevent slippage on the tube while adjusting installation in following steps.

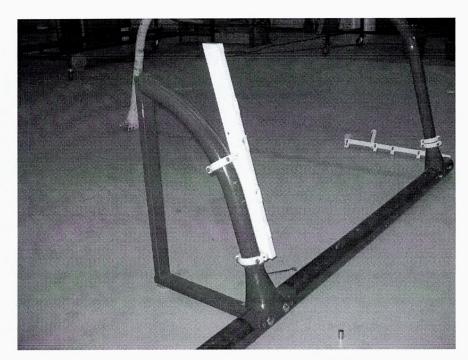


Figure 25.4 – Forward Beam Installation (Looking aft)



Figure 25.4 – Forward Beam Installation (Looking down)

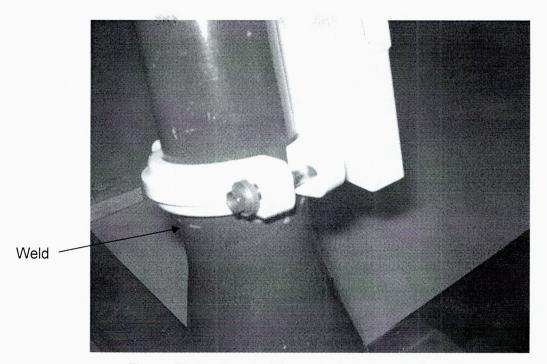


Figure 25.5 - Forward Beam Installation, Bottom Clamp

3. Attach Aft Beam Assembly to Clamp Assemblies on aft cross tube with two (2) AN4-14A Bolts and two (2) AN960-416 Washers. Locate clamps on LOWER set of holes in beam for HIGH installation, or UPPER set of holes for LOW installation. Do not fully tighten bolts. Position beam so that the bottom clamp is slightly above the weld at the bottom of the cross tube. Tighten clamp bolts enough to prevent slippage on the tube while adjusting installation in following steps.

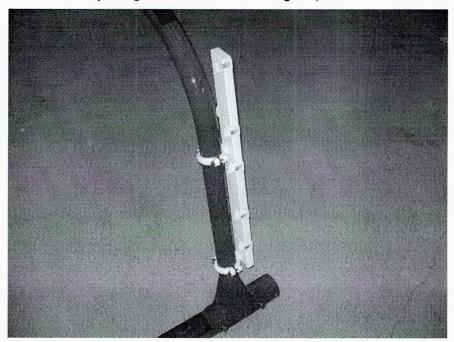


Figure 25.6 – Aft Beam Installation (Looking aft)

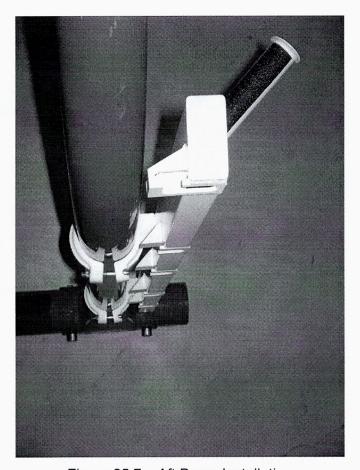


Figure 25.7 – Aft Beam Installation (Looking down)

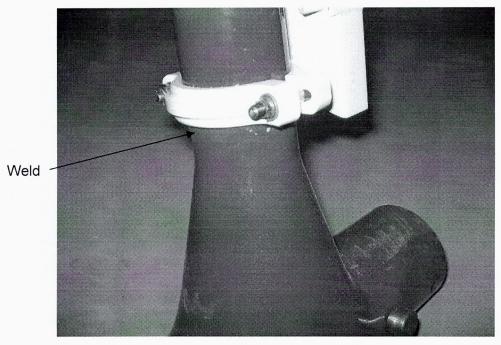


Figure 25.8 – Aft Beam Installation, Bottom Clamp

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4. Using a large square or straight edge as a reference, align the forward and aft beams with the cross tubes. Loosen bolts if required to adjust the beam, re-tighten clamp bolts after adjusting.

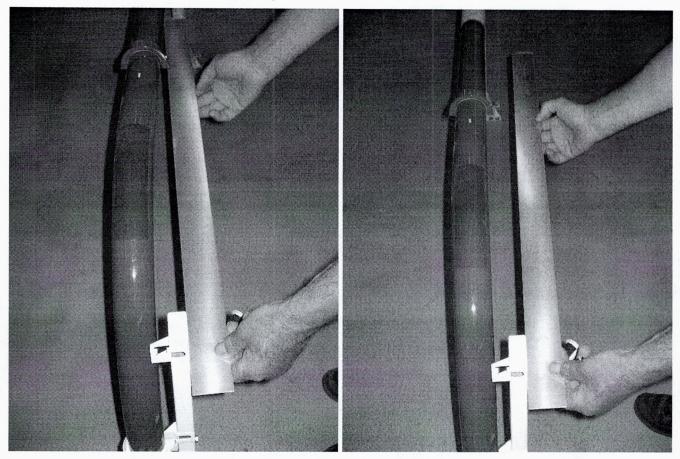


Figure 25.9 - Beam Alignment (Note left picture is not parallel to cross tube, right picture is correct)

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5. In order to easily snap the basket in and out of the beams, the beams must be correctly aligned. The following steps detail the alignment procedures. Ensure beams are approximately parallel and aligned front to back before starting. For all procedures listed below, set the basket on the beams as described, remove the basket to apply the correction and re-check with the basket after.

a. Beams too close together or too far apart (basket cannot be installed in top slots):

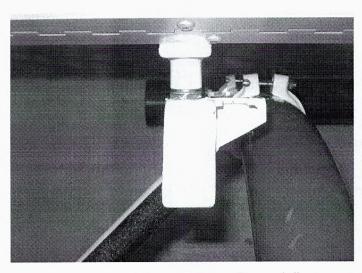
Set upper aft attachment fitting on basket into top keyway in aft beam and slide basket aft. Attempt to insert upper forward fitting into top keyway of forward beam.











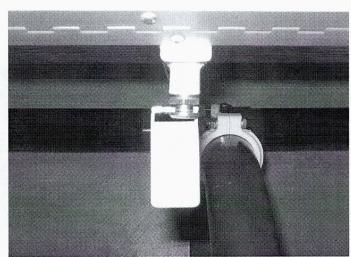


Figure 25.10 – Beam Adjustment, Step 1 – Beams too close together (Looking down, left picture aft beam, right picture forward beam)

The basket attachment fittings should be centred on the beams to allow for some fore/aft movement on the aft beam if required due to landing conditions or changes in weight and balance. Note in Figure 25.10 the aft fitting is bottomed in the aft slot and the forward fitting cannot be inserted. In this case the AFT beam would require shimming.

Using $\frac{1}{2}$ " commercial stainless steel fender washers, shim the forward or aft beam as required by inserting washer(s) between the beam and both clamps. Only use enough shims to allow basket to enter the TOP slot.

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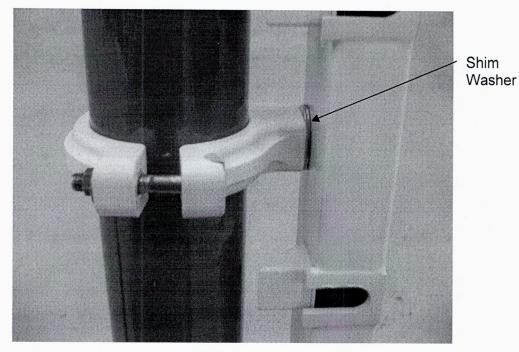
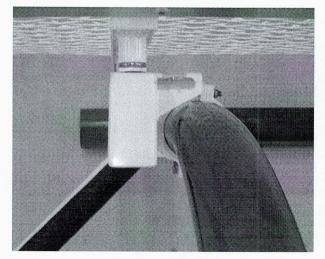


Figure 25.11 - Beam Adjustment, Step 1 - Shim Rear Beam



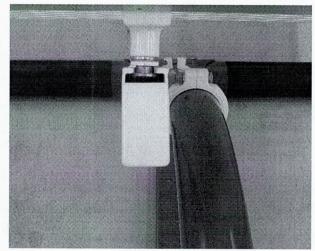


Figure 25.12 – Beam Adjustment, Step 1 – Basket Attachments After Shimming

Shim

b. Basket in top slots, resting with bottom fittings against beams (not in keyways), forward fitting does not line up with keyway (fore/aft):



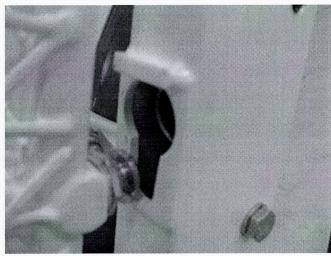
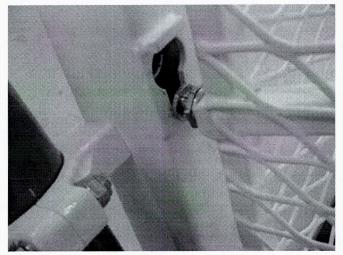


Figure 25.13 – Basket Adjustment Step 2 – Forward Fitting Out of Alignment (Left picture is looking aft, right picture is looking forward)

The beams are not at the same height. Raise or lower the aft beam along the aft cross tube until the bottom fittings on the basket are aligned with both keyways.



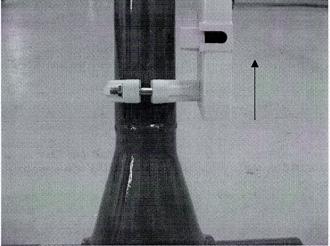


Figure 25.14 – Basket Adjustment Step 2 – Forward Fitting Aligned (Aft beam moved up to align forward fitting with keyway)

c. Basket in top slots, resting with bottom fittings against beams, bottom aft fitting bottoms out in keyway:

The landing gear cross tubes are not parallel. Using ½" commercial stainless steel fender washers, shim the top or bottom (as required) to align the bottom fitting on the basket with the keyway.

d. Basket in top slots, resting with bottom fitting against beams, bottom fitting is away from the surface of the forward beam (outboard):

The beams are not parallel. Adjust the forward beam up or down the forward cross tube until both bottom fittings sit flat on the beams.

e. Basket in all keyways, does not slide smoothly in and out of forward beam:

Opposite attachment fittings on the basket (top front and bottom aft or bottom front and top aft) may be shimmed out using a maximum of two (2) additional AN960-616 washers to allow the basket to slide into the keyways without twisting.

6. Bolts attaching beams to clamps (AN4-14A) that have been shimmed require longer bolts. There must be at least 0.38" of thread protruding with shims in place.

1 washer – AN4-14A bolt (no change)

2-3 washers - AN4-15A bolt

4-5 washers - AN4-16A bolt

Shimming in excess of 5 washers may indicate incorrect alignment in step 5. Confirm corrective actions taken, and if shims are still required, contact AERO Design Ltd. for further instructions.

7. Torque all $\frac{1}{4}$ " fasteners (12 places) to 30-40 inch-pounds. Note: A gap will remain on the side of the clamp assembly with the T-bolt as shown in Figure 25.1.

25-2 EUROCOPTER POD COMPATIBLE BEAMS INSTALLATION

A helicopter that is fitted with Eurocopter Extended Cargo Compartment ("Squirrel Cheeks") requires different Clamp Assemblies as listed in section 25-6, (configuration 78603-01-XX). Installation procedure is the same as listed in Section 25-1, with the beams mounted in the LOW position.

Ensure Clamp Assemblies are correct for the side of the helicopter the basket is to be installed on. The beam mounting lug is on the BOTTOM of the clamp and points AFT. The forward top clamp is different than the other three clamps.

25-3 BEAMS REMOVAL

Refer to Figure 25.1.

- 1. Remove Cargo Basket. Refer to section 25-5.
- 2. Remove fasteners securing clamp assemblies to the forward cross-tube. Remove Beam Assembly with clamps.
- 3. Remove fasteners securing clamp assemblies to the aft cross-tube. Remove Beam Assembly with clamps.

25-4 BASKET INSTALLATION

Refer to Figure 25.15 and Figure 25.16. Refer to section 25-6 for part numbers.

- 1. Set basket upper aft attachment into upper keyway in aft beam. Forward end of basket may rest on floor.
- 2. Lift basket from forward end, slide lower aft attachment into keyway on aft beam.
- 3. At forward attachment hoop, lift basket until lower attachment fitting hits stop.
- 4. Push fitting into keyway and slide basket down until locked.

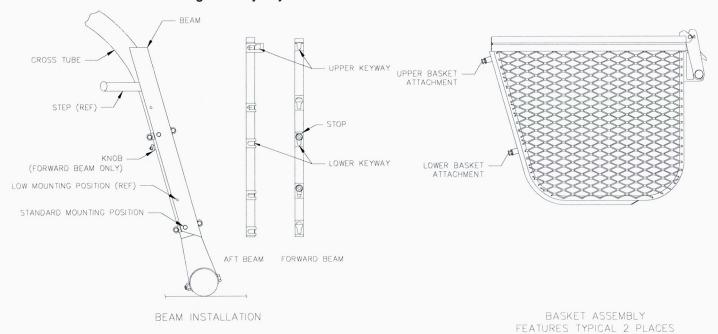


Figure 25.15 – Basket Attachment Features

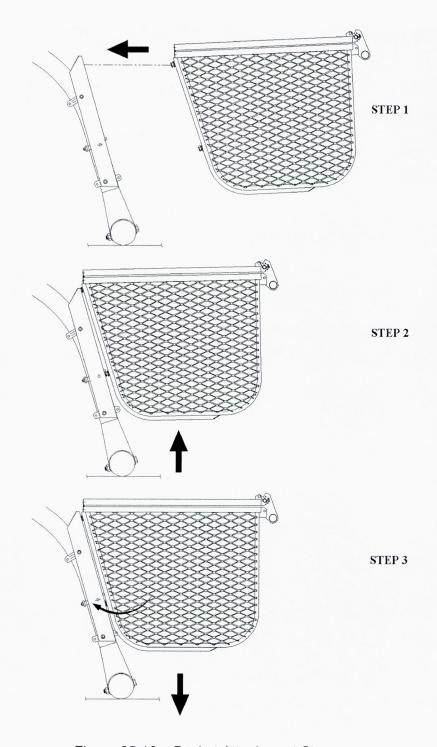


Figure 25.16 - Basket Attachment Steps

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25-5 BASKET REMOVAL

Refer to Figure 25.15 and Figure 25.16.

- 1. Pull knob at bottom end of forward beam and lift basket until attachment fittings are free of keyways on forward beam.
- 2. Rotate basket up until lower aft attachment fitting is free of keyway. Rest forward end of basket on floor.
- 3. Slide basket forward and raise basket until upper aft attachment fitting is free of keyway.

25-6 BILL OF MATERIALS

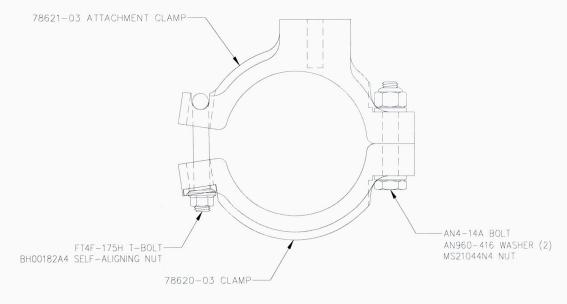
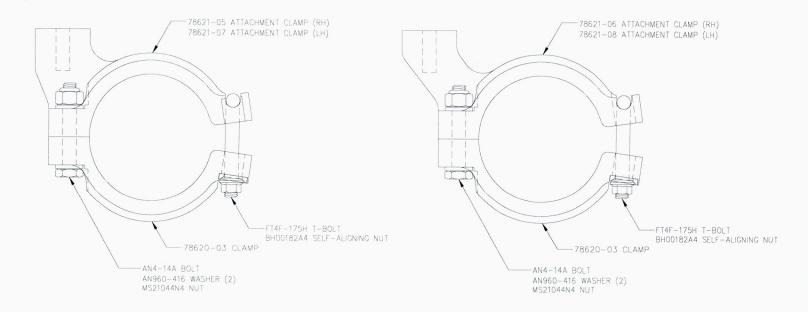


Figure 25.17 – Clamp Assembly

CLAMP ASSEMBLY (Standard)

Qty.	Part Number	Description
	78620-01	Clamp Assembly
. 1	78620-02	Attachment Clamp (with mounting pad)
. 1	78620-03	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut



FORWARD TOP ONLY

Figure 25.18 – Eurocopter Pod Compatible Clamps (Right Hand shown, Left Hand opposite)

CLAMP ASSEMBLY (Eurocopter Pod Compatible)

Qty.	Part Number	Description
	78621-01	Right Hand Clamp Assembly
. 1	78621-05	Attachment Clamp
	78621-02	Right Hand, Forward Top, Clamp Assembly
. 1	78621-06	Attachment Clamp
	78621-03	Left Hand Clamp Assembly
. 1	78621-07	Attachment Clamp
	78621-04	Left Hand, Forward Top Clamp Assembly
. 1	78621-08	Attachment Clamp
. 1	78621-09	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
1	BH00182A4	Self Aligning Nut

PROVISIONS INSTALLATION

LOW CONFIGURATION

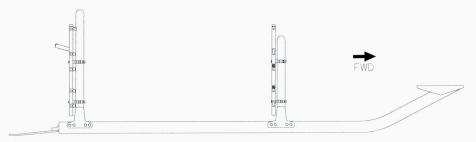


Figure 25.19 – Low Mounted Provisions Installation

Qty.	Part Number	Description
1	78602-01-01	Provisions Installation- RH Low
1	78602-01-02	Provisions Installation- LH Low
. 4	78620-01	Clamp Assembly
. 1	78633-01-01	Aft Beam Assembly (RH)
. 1	78633-01-02	Aft Beam Assembly (LH)
. 1	78634-01-00	Forward Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

HIGH CONFIGURATION

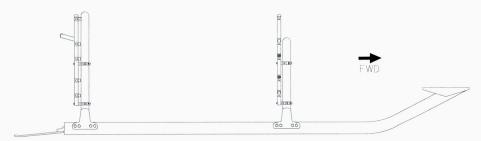


Figure 25.20 – High Mounted Provisions Installation

Qty.	Part Number	Description
1	78602-02-01	Provisions Installation – RH High
1	78602-02-02	Provisions Installation – LH High
. 4	78620-01	Clamp Assembly
. 1	78633-01-01	Aft Beam Assembly (RH)
. 1	78633-01-02	Aft Beam Assembly (LH)
. 1	78634-01-00	Forward Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

EUROCOPTER POD COMPATIBLE CONFIGURATION

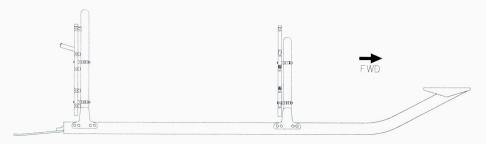


Figure 25.21 – Eurocopter Pod Compatible Provisions Installation

Qty.	Part Number	Description
1	78603-01-01	Provisions Installation – RH Eurocopter Pod Compatible
1	78603-01-02	Provisions Installation – LH Eurocopter Pod Compatible
. 3	78621-01	Clamp Assembly (RH)
. 3	78621-03	Clamp Assembly (LH)
. 1	78621-02	Clamp Assembly (RH – Forward Top)
. 1	78621-04	Clamp Assembly (LH – Forward Top)
. 1	78633-01-01	Aft Beam Assembly (RH)
. 1	78633-01-02	Aft Beam Assembly (LH)
. 1	78634-01-00	Forward Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

SHORT BASKET - MODEL 776



Figure 25.22 – Quick Release Cargo Basket Configuration 77601 (Short Basket)

Qty.	Part Number	Description
1	77601-01-XX	Low Short Basket Installation
. 1	78602-01-XX	Low Provisions Installation
. 1	77610-01	Short Basket Assembly
1	77601-02-XX	High Short Basket Installation
. 1	78602-02-XX	High Provisions Installation
. 1	77610-01	Short Basket Assembly
1	77601-03-XX	Eurocopter Pod Compatible Short Basket Installation
. 1	78603-01-XX	Eurocopter Pod Compatible Provisions Installation
. 1	77610-01	Short Basket Assembly

Note: -XX indicates side. Right side -01, left side -02

MEDIUM BASKET - MODEL 764



Figure 25.23 – Quick Release Cargo Basket Configuration 76401 (Medium Basket)

Qty.	Part Number	Description
1	76401-01-XX	Low Medium Basket Installation
. 1	78602-01-XX	Low Provisions Installation
. 1	76410-01-XX	Medium Basket Assembly
1	76401-02-XX	High Medium Basket Installation
. 1	78602-02-XX	High Provisions Installation
. 1	76410-01-XX	Medium Basket Assembly
1	76401-03-XX	Eurocopter Pod Compatible Medium Basket Installation
. 1	78603-01-XX	Eurocopter Pod Compatible Provisions Installation
. 1	76410-01-XX	Medium Basket Assembly

Note: -XX indicates side. Right side -01, left side -02

LONG BASKET - MODEL 78401



Figure 25.24 – Quick Release Cargo Basket: Configuration 78401 (Long Basket)

Qty.	Part Number	Description
1	78401-01-XX	Low Long Basket Installation
. 1	78602-01-XX	Low Provisions Installation
. 1	78410-01	Long Basket Assembly
1	78401-02-XX	High Long Basket Installation
. 1	78602-02-XX	High Provisions Installation
. 1	78410-01	Long Basket Assembly
1	78401-03-XX	Eurocopter Pod Compatible Long Basket Installation
. 1	78603-01-XX	Eurocopter Pod Compatible Provisions Installation
. 1	78410-01	Long Basket Assembly

Note: -XX indicates side. Right side -01, left side -02

25-6 WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 764, 776 and 784 and attachment provisions 786. Each cargo basket model has multiple configurations. Refer to the weight and balance information applicable to basket model and configuration installed.

Determine which mounting position (Low, High, or Eurocopter Pod Compatible) and length (Short, Medium, or Long) and locate on chart.

Two weight and balance configurations are required: Attachment Provisions only; and Basket Installed. The basket configurations INCLUDE the provisions.

			S	tandard Uni	ts				Metric Units		
		Weight	Longit	udinal	Lat	eral	Weight	Longit		Late	eral
Configuration			Arm	Moment	Arm	Moment		Arm	Moment	Arm	Moment
		lb	in	in-lb	in	in-lb	kg	mm	mm-kg	mm	mm-kg
Mounting Provisions Installation	Part Number										
Right Hand											
Low	78602-01-01	6.4	135.6	867.5	37.2	238.0	2.9	3443.0	9970.6	944.6	2735.4
High	78602-02-01	6.4	135.6	867.5	36.5	233.8	2.9	3443.0	9970.6	928.1	2687.6
Eurocopter Pod Compatible	78603-01-01	6.8	135.4	921.0	38.8	263.6	3.1	3440.1	10 584.8	984.6	3029.6
Left Hand											
Low	78602-01-02	6.4	135.6	867.5	-37.2	-238.0	2.9	3443.0	9970.6	-944.6	-2735.4
High	78602-02-02	6.4	135.6	867.5	-36.5	-233.8	2.9	3443.0	9970.6	-928.1	-2687.6
Eurocopter Pod Compatible	78603-01-02	6.8	135.4	921.0	-38.8	-263.6	3.1	3440.1	10584.8	-984.6	-3029.6
Short Basket Installation											
Right Hand											
Low	77601-01-01	41.4	135.9	5627.5	45.9	1900.5	18.7	3452.6	64678.3	1166.0	21842.9
High	77601-02-01	41.4	135.9	5627.5	45.1	1868.3	18.7	3452.6	64678.3	1146.3	21473.2
Eurocopter Pod Compatible	77601-03-01	41.8	135.9	5681.0	47.8	1996.1	18.9	3452.1	65292.5	1212.9	22941.6
Left Hand											
Low	77601-01-02	41.4	135.9	5627.5	-45.9	-1900.5	18.7	3452.6	64678.3	-1166.0	-21842.9
High	77601-02-02	41.4	135.9	5627.5	-45.1	-1868.3	18.7	3452.6	64678.3	-1146.3	-21473.2
Eurocopter Pod Compatible	77601-03-02	41.8	135.9	5681.0	-47.8	1996.1	18.9	3452.1	65292.5	-1212.9	-22941.6
Medium Basket Installation											
Right Hand		79									
Low	76401-01-01	51.4	144.0	7401.5	46.7	2402.5	23.3	3657.6	85067.2	1107.0	07040.4
High	76401-02-01	51.4	144.0	7401.5	46.0	2362.3	23.3	3657.6	85067.2	1187.2	27612.4
Eurocopter Pod Compatible	76401-02-01	51.8	143.9	7455.0	48.6	2518.1	23.3	3655.5	85681.4	1167.4	27150.9 28941.1
Left Hand											
Low	76401-01-02	51.4	144.0	7401.5	-46.7	-2402.5	23.3	3657.6	85067.2	-1187.2	-27612.4
High	76401-02-02	51.4	144.0	7401.5	-46.0	-2362.3	23.3	3657.6	85067.2	-1167.4	-27150.9
Eurocopter Pod Compatible	76401-03-02	51.8	143.9	7455.0	-48.6	-2518.1	23.4	3655.5	85681.4	-1234.7	-28941.1
Long Basket Installation					-						
Right Hand											
Low	78401-01-01	63.9	136.0	8687.5	47.4	3026.8	28.9	3453.3	99847.5	1203.1	34787.1
High	78401-02-01	63.9	136.0	8687.5	46.6	2976.6	28.9	3453.3	99847.5	1183.2	34210.6
Eurocopter Pod Compatible	78401-03-01	64.3	135.9	8741.0	49.3	3167.4	29.1	3452.9	100461.7	1251.2	36403.0
Left Hand											
Low	78401-01-02	63.9	136.0	8687.5	-47.4	-3026.8	28.9	3453.3	99847.5	-1203.1	-34787.1
High	78401-02-02	63.9	136.0	8687.5	-46.6	-2976.6	28.9	3453.3	99847.5	-1183.2	-34210.6
Eurocopter Pod Compatible	78401-03-02	64.3	135.9	8741.0	-49.3	-3167.4	29.1	3452.9	100461.7	-1251.2	-34210.6

Table 25.1 – Weight and Balance

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OPTIONS. The following weight and balance is for optional configurations of the basket.

Standard Units

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
70406-01	Front End Cutout	-0.3	107.8	-32.3	*	*
70405-01	Lid Step (Short Basket)	4.0	136.0	544.0	*	*
70405-01	Lid Step (Medium Basket)	5.8	145.2	842.2	*	*
70405-01	Lid Step (Long Basket)	7.7	136.0	1047.2	*	*
70408-01	Hangar Wheel (Short/Medium Basket)	0.8	110.0	88.0	*	*
70408-01	Hangar Wheel (Long Basket)	0.8	92.0	73.6	*	*

Metric Units

P/N	Description	Weight	Longitudinal		Lateral	
			arm	Moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
70406-01	Front End Cutout	-0.1	2730.5	-273.1	*	*
70405-01	Lid Step (Short Basket)	1.8	3453.3	6215.9	*	*
70405-01	Lid Step (Medium Basket)	2.6	3688.1	9589.1	*	*
70405-01	Lid Step (Long Basket)	3.5	3453.3	12086.6	*	*
70408-01	Hangar Wheel (Short/Medium Basket)	0.4	2794.0	1117.6	*	*
70408-01	Hangar Wheel (Long Basket)	0.4	2336.8	934.7	*	*

Table 25.2 – Options Weight and Balance

25-7 STRUCTURAL FASTENER DATA

Refer to Eurocopter Standard Practices Manual for torque values not listed in this ICA.

^{*}Note: Lateral arm is the same as the basket configuration. Lateral moment is calculated with the lateral arm.

AS350 & AS355 SERIES HELICOPTERS

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT for the

INSTALLATION of the AERO DESIGN QUICK RELEASE CARGO BASKET AND/OR QUICK RELEASE MAINTENANCE STEP

CARGO BASKET MODELS: 76401, 77601, 78401

TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory. Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Cargo Basket Installation and/or Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.

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Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	Ву
0	25 Feb, 2008	None		
1	29 Jan, 2010	All		
2	16 June 2010	1, 2, 4-11		

I LIMITATIONS

- The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Models 764 and 784 is 250 lb. (113 kg). The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Model 776 is 300 lb. (135.7 kg).
- Only one basket may be installed on the helicopter, on the right or left side.
- Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
- 4. V_{NE} is unchanged from the basic rotorcraft.
- 5. AS355NP only: For Category A operations, the basket must be removed. Mounting provisions may be left in place.

II NORMAL PROCEDURES

- 1. Pre-flight inspections:
 - Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - Ensure the basket is locked in postion on the beams. Pull
 up on the forward and aft end of the basket to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

- Cruise performance and range will be reduced by approximately 8 percent with the Cargo Basket Installed.
- 2. AEO climb performance will be reduced by up to 150 fpm.

Revision 1 29 January 2010 Page 3
TRANSPORT CANADA APPROVED

V WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 76401, 77601, and 78401. Each model has multiple configurations. Refer to the weight and balance information applicable to model and configuration installed.

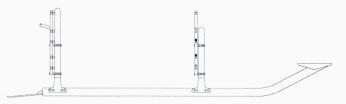
Longitudinal and Lateral moment arms for Cargo are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

1. Configuration 786 – Mounting Provisions Only

The following weight and balance is for the mounting provisions installed in accordance with drawing 78602 or 78603 as applicable.



Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78602-01-01	Low Right Hand Provisions	6.4	135.6	866.0	37.2	238.0
78602-02-01	High Right Hand Provisions	6.4	135.6	866.0	36.5	233.8
78603-01-01	Right Hand Eurocopter Pod Compatible Provisions	6.8	135.4	921.0	38.8	263.6
78602-01-02	Low Left Hand Provisions	6.4	135.6	866.0	-37.2	-238.0
78602-02-02	High Left Hand Provisions	6.4	135.6	866.0	-36.5	-233.8
78603-01-02	Left Hand Eurocopter Pod Compatible Provisions	6.8	135.4	921.0	-38.8	-263.6

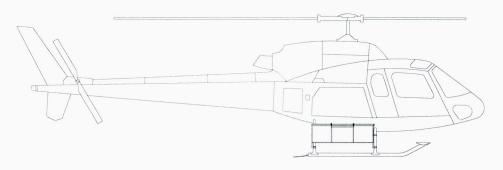
Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78602-01-01	Low Right Hand Provisions	2.9	3443.0	9970.6	944.6	2735.4
78602-02-01	High Right Hand Provisions	2.9	3443.0	9970.6	928.1	2687.6
78603-01-01	Right Hand Eurocopter Pod Compatible Provisions	3.1	3440.1	10584.8	984.6	3029.6
78602-01-02	Low Left Hand Provisions	2.9	3443.0	9970.6	-944.6	-2735.4
78602-02-02	High Left Hand Provisions	2.9	3443.0	9970.6	-928.1	-2687.6
78603-01-02	Left Hand Eurocopter Pod Compatible Provisions	3.1	3440.1	10584.8	-984.6	-3029.6

Revision 2 16 June 2010

2. Configuration 776 (Short Basket)

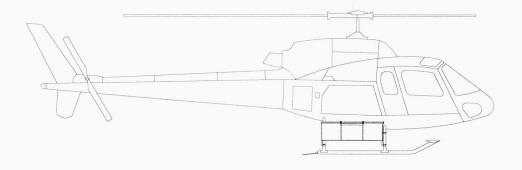
The following weight and balance is for cargo baskets installed in accordance with drawing 77601.



Standard

- Constitu						
P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
77601-01-01	Low Right Hand Installation	41.4	135.9	5627.5	45.9	1900.5
77601-02-01	High Right Hand Installation	41.4	135.9	5627.5	45.1	1868.3
77601-03-01	Eurocopter Pod Compatible Right Hand Installation	41.8	135.9	5681.0	47.8	1996.1
	Maximum Cargo (RH)	300.0	135.9	40770.0	*	*
77601-01-02	Low Left Hand Installation	41.4	135.9	5627.5	-45.9	-1900.5
77601-02-02	High Left Hand Installation	41.4	135.9	5627.5	-45.1	-1868.3
77601-03-02	Eurocopter Pod Compatible Left Hand Installation	41.8	135.9	5681.0	-47.8	-1996.1
	Maximum Cargo (LH)	300.0	135.7	40710.0	*	*

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.



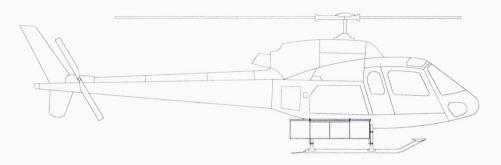
Metric

		wetric				
P/N	Description	Weight	Longitudinal		Late	eral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
77601-01-01	Low Right Hand Installation	18.7	3452.6	5627.5	1166.0	21842.9
77601-02-01	High Right Hand Installation	18.7	3452.6	5627.5	1146.3	21473.2
77601-03-01	Eurocopter Pod Compatible Right Hand Installation	18.9	3452.6	5681.0	1212.9	22941.6
	Maximum Cargo (RH)	135.7	3452.6	468768.7	*	*
77601-01-02	Low Left Hand Installation	18.7	3452.6	5627.5	-1166.0	-21842.9
77601-02-02	High Left Hand Installation	18.7	3452.6	5627.5	-1146.3	-21473.2
77601-03-02	Eurocopter Pod Compatible Left Hand Installation	18.9	3452.6	5681.0	-1212.9	-22941.6
	Maximum Cargo (LH)	135.7	3452.6	468768.7	*	*

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

3. Configuration 764 (Medium Basket)

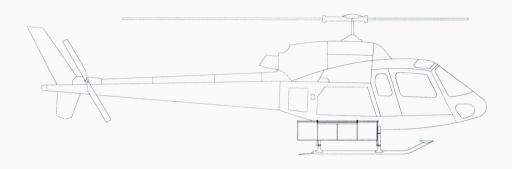
The following weight and balance is for cargo baskets installed in accordance with drawing 76401.



Standard

		anuaru				
P/N	Description	Weight	Longi	tudinal	La	iteral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
76401-01-01	Low Right Hand Installation	51.4	144.0	7401.5	46.7	2402.5
76401-02-01	High Right Hand Installation	51.4	144.0	7401.5	46.0	2362.3
76401-03-01	Eurocopter Pod Compatible Right Hand Installation	51.8	143.9	7455.0	48.6	2518.1
	Maximum Cargo (RH)	250.0	144.0	36000.0	*	*
76401-01-02	Low Left Hand Installation	51.4	144.0	7401.5	-46.7	-2402.5
76401-02-02	High Left Hand Installation	51.4	144.0	7401.5	-46.0	-2362.3
76401-03-02	Eurocopter Pod Compatible Left Hand Installation	51.8	143.9	7455.0	-48.6	-2518.1
	Maximum Cargo (LH)	250.0	144.0	36000.0	*	*

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.



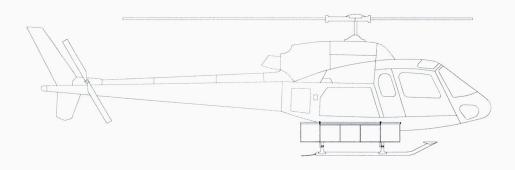
Metric

		WICTIC				
P/N	Description	Weight	Longitudinal		Late	eral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76401-01-01	Low Right Hand Installation	23.3	3657.6	85067.2	1187.2	27612.4
76401-02-01	High Right Hand Installation	23.3	3657.6	85067.2	1167.4	27150.9
76401-03-01	Eurocopter Pod Compatible Right Hand Installation	23.4	3655.5	85681.4	1234.7	28941.1
	Maximum Cargo (RH)	113.1	3657.6	413674.6	*	*
76401-01-02	Low Left Hand Installation	23.3	3657.6	85067.2	-1187.2	-27612.4
76401-02-02	High Left Hand Installation	23.3	3657.6	85067.2	-1167.4	-27150.9
76401-03-02	Eurocopter Pod Compatible Left Hand Installation	23.4	3655.5	85681.4	-1234.7	-28941.1
	Maximum Cargo (LH)	113.1	3657.6	413674.6	*	*

 $^{^{\}star}\text{Lateral}$ arm is same as basket configuration. Lateral moment is calculated with lateral arm.

4. Configuration 784 (Long Basket).

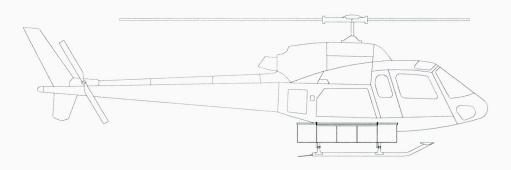
The following weight and balance is for cargo baskets installed in accordance with drawing 78401.



Standard

Otanuaru						
P/N	Description	Weight	Longitudinal		La	iteral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78401-01-01	Low Right Hand Installation	63.9	136.0	8687.5	47.4	3026.8
78401-02-01	High Right Hand Installation	63.9	136.0	8687.5	46.6	2976.6
78401-03-01	Eurocopter Pod Compatible Right Hand Installation	64.3	135.9	8741.0	49.3	3167.4
	Maximum Cargo (RH)	250.0	136.0	34000.0	*	*
78401-01-02	Low Left Hand Installation	63.9	136.0	7401.5	-47.4	-3026.8
78401-02-02	High Left Hand Installation	63.9	136.0	7401.5	-46.6	-2976.6
78401-03-02	Eurocopter Pod Compatible Left Hand Installation	64.3	135.9	7455.0	-49.3	-3167.4
	Maximum Cargo (LH)	250.0	136.0	34000.0	*	*

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.



Metric

		Metric				
P/N	Description	Weight	Longitudinal		Late	eral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78401-01-01	Low Right Hand Installation	28.9	3453.3	99847.5	1203.1	34787.1
78401-02-01	High Right Hand Installation	28.9	3453.3	99847.5	1183.2	34210.6
78401-03-01	Eurocopter Pod Compatible Right Hand Installation	29.1	3452.9	100461.7	1251.2	36403.3
	Maximum Cargo (RH)	113.1	3453.3	390568.2	*	*
78401-01-02	Low Left Hand Installation	28.9	3453.3	99847.5	-1203.1	-34787.1
78401-02-02	High Left Hand Installation	28.9	3453.3	99847.5	-1183.2	-34210.6
78401-03-02	Eurocopter Pod Compatible Left Hand Installation	29.1	3452.9	100461.7	-1251.2	-36403.3
	Maximum Cargo (LH)	113.1	3453.3	390568.2	*	*

^{*}Lateral arm is same as basket configuration. Lateral moment is calculated with lateral arm.

VI INSTALLATION / REMOVAL INSTRUCTIONS

Cargo Baskets

The beams are installed in accordance with drawing 78602 or 78603 as applicable. The basket is installed in accordance with drawing 76401, 77601 or 78401, as applicable. Removal of the basket leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket and which weight and balance amendment is in effect is required when basket is installed or removed.

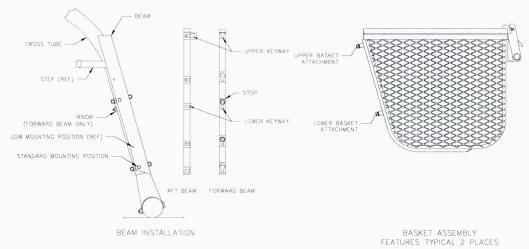


Figure 1 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical for low and high beam installations)

- 5. Installation Refer to Figure 1 and Figure 2.
 - a) Set basket upper aft basket attachment into upper keyway in aft beam. Forward end of basket may rest on floor.
 - b) Lift basket from forward end, slide lower aft attachment into keyway on aft beam.
 - c) At forward attachment hoop, left basket until lower attachment fitting hits stop.
 - d) Push fitting into keyway and slide basket down until locked.

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FMS764.91

- 2. Removal Refer to Figure 1 and Figure 2.
 - a) Pull knob at bottom end of forward beam and lift basket until attachment fittings are free of keyways.
 - b) Rotate basket up until lower aft attachment fitting is free of keyway. Rest forward end of basket on floor.
 - c) Slide basket forward and raise basket until upper aft attachment fitting is free of keyway.

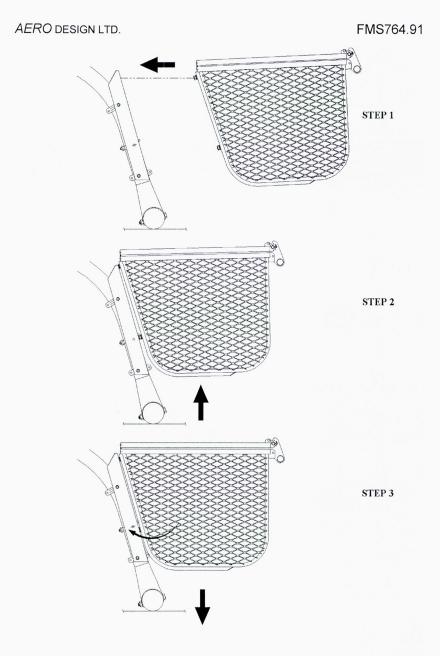


Figure 2 – Basket Attachment Steps (Installation instructions typical for all configurations).

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ENGINEERING REPORT ER764.05

EUROCOPTER AS350/AS355 SERIES

QUICK RELEASE MOUNTING PROVISIONS QUICK RELEASE CARGO BASKET

New Beam Configuration
Eurocopter Pod Compatible Clamp Configuration

Prepared by: Jeff Clarke, CET

Approved by: E. Burgoin, P.Eng., DAR 290M

Revision 0, 16 June 2010

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1.0 INTRODUCTION

In order to reduce confusion over the many installation configurations available, the various configurations of beams have been simplified to a single pair of beams that are be used for all required configurations. The keyway configuration has been changed on the aft beam to a horizontal slot that allows for some variation in the spacing of the helicopter cross tubes. This report will demonstrate that the new beams can support the loads required.

It has been found that Eurocopter cargo compartment extenders ("squirrel cheeks") do not allow the lid of the basket to open fully. To correct for this condition, new attachment clamps were produced to shift the basket outboard by 2 inches. This report will demonstrate that the new clamps can support the loads required.

2.0 REFERENCE TEXT

AERO Design Ltd. Engineering Report ER764.01, TR764.02, TR764.04 AERO Design Ltd. Drawing 78633, 78634, 78621

3.0 BASIS OF CERTIFICATION

AS350 Series and AS355 Series: H-83/H-87

FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification).

This installation:

FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification).

4.0 APPLICABILITY OF AIRWORTHINESS DIRECTIVES

Airworthiness Directives applicable to the Eurocopter AS350 and AS355 Series were reviewed, and none were found to affect this project.

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5.0 LOADS

AS350 Series and AS355 Series, FAR 27:

FAR 27.561(b)(3)

Ultimate Upward Emergency Landing Load Factor:

 $n_{e_{up}} := 1.5$

Ultimate Forward Emergency Landing Load Factor:

 $n_{e \text{ fwd}} := 4.0$

Ultimate Sideward Emergency Landing Load Factor:

 $n_{e \text{ side}} := 2.0$

Ultimate Downward Emergency Landing Load Factor:

 $n_{e \text{ down}} := 4.0$

FAR 27.625

Fitting Factor (does not apply to articles being tested):

 $n_{ff} := 1.15$

FAR 27.303

Safety Factor:

 $n_{sf} := 1.5$

FAR 27.337(a)

Limit Positive Maneuvering Load Factor:

 $n_{man} := 3.5$

 $n_{man ult} := n_{man} \cdot n_{sf}$

Ultimate Positive Maneuvering Load Factor:

 $n_{\text{man ult}} = 5.25$

Limit Negative Maneuvering Load Factor:

 $n_{\text{man neg}} := -1.0$

 $n_{\text{man neg } u} := n_{\text{man neg}} \cdot n_{\text{sf}}$

Ultimate Negative Maneuvering Load Factor:

 $n_{\text{man neg u}} = -1.5$

CRITICAL ULTIMATE LOAD FACTORS:

Downward:

Ultimate Positive Maneuvering Load Factor:

 $n_{\text{man ult}} = 5.25$

Forward:

Ultimate Forward Emergency Landing Load Factor:

 $n_{e \text{ fwd}} = 4$

Sideward:

Ultimate Sideward Emergency Landing Load Factor:

 $n_{e \text{ side}} = 2$

Upward:

Ultimate Upward Emergency Landing Load Factor:

 $n_{e up} = 1.5$

Note: The basket is mounted below and to one side of the cabin. Forward deflection or failure in the emergency landing condition does not endanger the occupants. Likewise, Sideward and Upward deflection or failure of the basket in the emergency landing condition do not endanger the occupants.

Sideward and Upward Load Factors are used in the tests to ensure that the lid of the basket does not open in flight.

5.1 Inertia Loads

The short cargo basket can carry the most cargo, therefore the short cargo basket loads are critical.

5.1.1 Cargo Basket 77601 (Short Basket)

The inertia load for the short basket is highest, and will be used for testing of the light wall beams. The basket has already been demonstrated to carry 300 lbs cargo at ultimate load.

$$W_{basket} := 40 \cdot lbf$$

Weight of short basket configuration

$$W_{cargo} := 300 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 340lbf$$

Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1190lbf$$

Limit maneuvering load

$$P_{ult_man} := P_{basket} \cdot n_{man\ ult}$$

$$P_{ult\ man} = 1785lbf$$

Ultimate maneuvering load

5.2 Drag Load

$$\rho := 0.002378 \frac{\text{slug}}{\text{ft}^3}$$

Density of air at Sea Level.

$$V_{ne} := 155 \cdot knots$$

Never-Exceed-Speed of AS350B3.

(Ref. AS350 TCDS)

(Highest of AS350/AS355 Series)

$$V_d := \frac{V_{ne}}{0.9}$$

$$V_d = 172 knots$$

Design Dive Speed of AS350B3

 $l_{basket} := 97 \cdot in$

Length of basket.

 $w_{basket} := 22.5 in$

Width of basket

 $h_{basket} := 19.25 in$

Height of basket.

 $A_f := 376 \text{ in}^2$

Frontal Area of basket.

 $A_p := l_{basket} \cdot w_{basket}$

$$A_p = 2183 in^2$$

Planar Area of basket.

 $\frac{l_{\text{basket}}}{w_{\text{basket}}} = 4.3$

Fineness ratio of basket

 $C_{Do} := 1.1$

Drag Coefficient of Basket, (overestimated) (Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

 $P_{drag} := \frac{\rho}{2} \cdot {V_d}^2 \cdot A_f \cdot C_{Do}$

 $P_{drag} = 289lbf$

Limt Drag on basket.

 $P_{drag_ult} := P_{drag} \cdot n_{sf}$

 $P_{drag\ ult} = 433lbf$

Ultimate Drag load on basket

 $AC_{drag} := 48.4 \text{ in}$

Lateral Aerodynamic Center of basket.

(Low configuration)

6.0 LOAD TEST

6.1 Test Setup

A scrap set of landing gear cross tubes and skid tube were setup as they would be installed on the helicopter. The free side of the cross tubes were clamped to a table to prevent tipping of the test setup under load. The attachment provisions were installed in accordance with drawing 78602 or 78603 (as applicable), using beams fabricated in accordance with drawing 78633 (aft beam) and 78634 (forward beam).

The maneuvering load is applied by stacking bags of lead shot (25 lbs each) into a basket installed on the beams. The drag load is applied with a chain come-along attached to a load cell, pulling on the aft face of the basket.

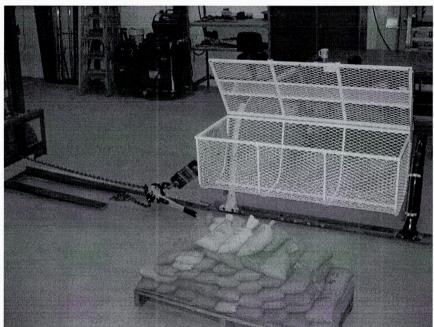


Figure 6.1.1 - Test Setup

The basket weight applies 1g down in addition to the lead shot applied in the maneuvering condition.

6.2 Beams Load Test

The beams were installed in the high position in accordance with drawing 78602 as this is the critical position for the basket relative to the attachments.

6.2.1 Limit Load

The limit loads on the short basket installation with 300 lbs of cargo are:

 $P_{lim\ man} = 1190 lbs.$

Limit Positive Maneuvering Load

 $P_{lim_drag} = 289 lbs.$

Limit Drag Load

The basket was loaded with 1200 lbs of lead shot (48 bags), and pulled aft 350 lbs. The basket weight applied 1g down (40 lbs) for a total of 1240 lbs. The load was applied for more than 3 seconds.

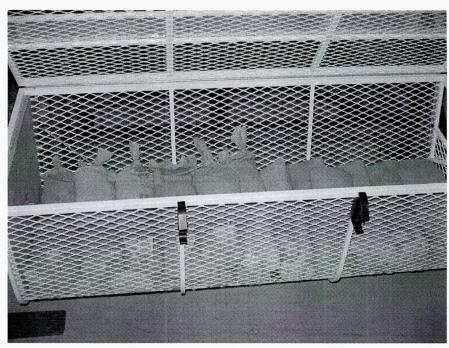


Figure 6.2.1 – Limit Maneuvering Load

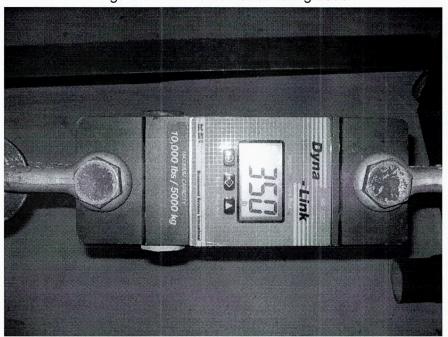


Figure 6.2.2 – Limit Drag Load

The loads were removed and the beams checked for permanent deformation. There was no permanent deformation found.

6.2.2 Ultimate Load

The ultimate loads on the short basket installation with 300 lbs of cargo are:

 $P_{ult_man} = 1785 lbs.$

Ultimate Positive Maneuvering Load

 $P_{ult_drag} = 433 lbs.$

Ultimate Drag Load

The basket was loaded with 1800 lbs of lead shot (72 bags), and pulled aft 460 lbs. The basket applied 1g down (40 lbs) for a total down load of 1840 lbs. The load was applied for more than 3 seconds.

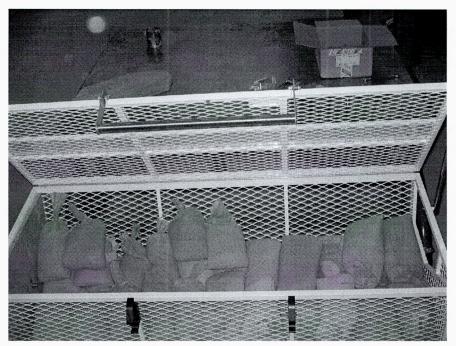


Figure 6.2.3 - Ultimate Maneuvering Load



Figure 6.2.4 – Ultimate Drag Load

The load was removed and the beams checked for permanent deformation and failure. There was slight deformation of both beams, about 1/8" on both beams. The deformation is not excessive and does not prevent removal or installation of the basket. The new configuration of beams in accordance with drawing 78633 and 78634 are sufficient for installation.

6.3 Eurocopter Pod Compatible Clamps Test

Testing of the Eurocopter pod compatible clamps is required to demonstrate that shifting the basket outboard by changing the clamp will not prevent the clamp from supporting the loads. The beams have been demonstrated previously and are not rechecked in this test.

Previous testing has demonstrated that the clamps do not shift or deform under limit loads. Therefore only ultimate loads are checked.

The attachment provisions were installed in accordance with drawing 78603.

6.3.1 Ultimate Load

The ultimate loads on the short basket installation with 300 lbs of cargo are:

 $P_{ult\ man} = 1785 lbs.$

Ultimate Positive Maneuvering Load

 $P_{ult\ drag} = 433 lbs.$

Ultimate Drag Load

The basket was loaded with 1800 lbs (72 bags) of lead shot, and pulled aft 470 lbs.

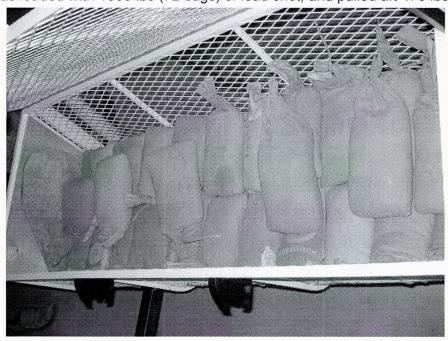


Figure 6.3.1 – Ultimate Maneuvering Load

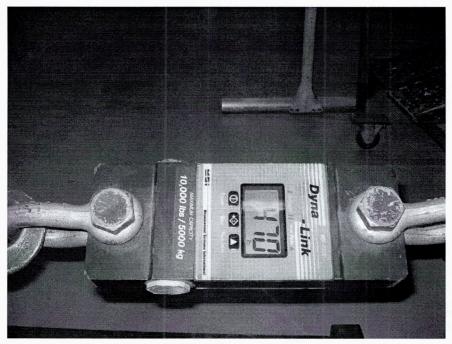


Figure 6.3.2 – Ultimate Drag Load

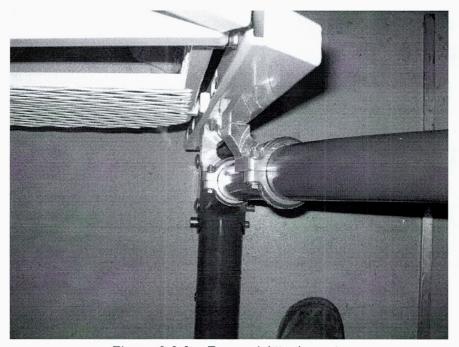


Figure 6.3.3 – Forward Attachments

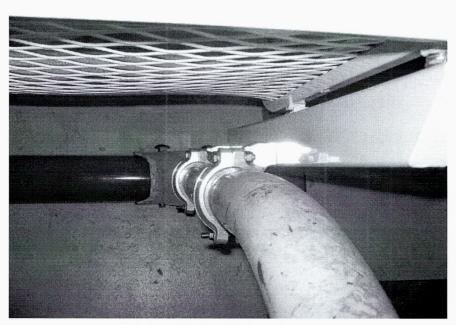


Figure 6.3.4 – Aft Attachments

The load was removed and the clamps were checked for permanent deformation, failure or slipping on the cross tube. There was no permanent deformation found, and the clamps did not slip on the cross tube. The Eurocopter pod compatible clamps fabricated in accordance with drawing 78621 are sufficient for installation.

AERO DESIGN LTD. 2013 – 39 Avenue N.E. Calgary, Alberta, T2E 6R7

SIGNED UNDERTAKING

Tel: 403-250-8027 Fax: 403-250-8333

Α In accordance with CAR 521 AERO Design Ltd. hereby Company to hold the approval document(s): undertake to carry out the responsibilities of a design approval document holder. as set out in Division VIII of Part V, Subpart 21 of the CARs, regarding: 1. Technical capability, 2. Service difficulty reporting, 3. Establishing a service difficult reporting system, 4. Investigation of service difficulty reports, 5. Mandatory changes, 6. Transfers, 7. Record keeping and loss or disposal of records, 8. Manuals, Instructions for continued airworthiness, and 10 Supplemental integrity instructions 27 July 2010 Signature of Holder's authorize d person: Date: President Position / Title: В Pursuant to the requirements of the CARs, Part V, Subpart 521, Chapter 160: AERO Design Ltd. agrees to administer the preceding responsibilities on behalf of the holder of the approval(s) below, on a fee for service basis. Data referred to herein may be found in: Transport Canada file number: C-10-807 and / or Project Reference number: 764 and / or Approval Number: SHQ8-16 per: Signature of Holder's authorize E. Burgoin Consultant E. Bugoin Print Name Print Name 27 July 2010 27 July 2010 Date: Date

DECLARATION OF CONFORMITY WITH THE CERTIFICATION BASIS

In accordance with Canadian Aviation Regulations Subpart 521, I hereby declare that the design of the Quick Release Mounting Provisions and Cargo Basket Installations, as detailed in the data approved by Transport Canada approval SH08-16, Issue 2, has been demonstrated to conform to the best of my knowledge to the basis of certification established by the Minister for that approval in file C-10-0807.

AERQ Design Ltd.

per: ///

(4)

E. Burgoin
Print Name

Consultant

17 September, 2010

Date

Tel: 403-250-8027 Fax: 403-250-8333 www.aerodesign.ca

17 September 2010

Transport Canada Aircraft Certification Division 11th Floor, Canada Place 9700 Jasper Avenue Edmonton, Alberta T5J 4E6

Attn: Jack Staal Your File: C-10-0807

Our File: 764

Re: Eurocopter AS350 Cargo Baskets

Jack,

Please find attached the following documents related to this project:

Modification Approval Request Application Form MOD764 Rev. 2

Regards,

É. Burgoin, P.Eng, DAR 290M

Encl.

	MODIFICATION APPROV	AL R	EQUEST AP	PLICAT	ION FO	ORM .	MOD7	64, Rev. 2
1.	NAME AND ADDRESS OF APPLICANT:	2. IDENTIFICATION OF PRODUCT						
	AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7	MAI E	KE: urocopter			DEL: AS350 (al AS355 (al		
	ALL CORRESPONDANCE TO: AERO Design Ltd. 2013 - 39th Avenue NE Calgary, Alberta T2E 6R7		SERIAL No.: All eligible			GISTRATIO	N:	
3.	REQUEST FOR:							
	A. SUPPLEMENTAL TYPE CERTIFICATE (STC)							
	B. STC/STA REVISION	\boxtimes	STC/STA No. SI	H08-16	C-	10-08	07	
	C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)							
	D. LIMITED STC/STA REVISION		LSTC/LSTA No.					
	E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE							
	F. F.A.A. STC REVISION		STC No.					
	G. FAMILIARIZATION OF F.A.A. STC		STC No.					
200			310 No.					
	H. REPAIR DESIGN APPROVAL (RDC)							
	I. PARTS DESIGN APPROVAL (PDA)							
4.	TITLE OF MODIFICATION OR REPAIR: Quick Release Cargo Basket Installation							
5.	BRIEF DESCRIPTION OF MODIFICATION OR REPAIR:							
	Installation of external attachment provisions; Installation of cargo	basket.	. Revision is to upd	ate mounting	g configura	tions		
6.	APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE	(TC) D	OCUMENTS:					
	A. TA NO. H-83/H-87 B. TC No.		C. OTHER					
7.	PROPOSED BASIS OF APPROVAL:							
	A. SAME AS TA ⊠ B. SAME AS TC □	3	C. OTHER	(Please s	specify)			
8.			,	REQU	JIRED	FOF	R DOT USE	ONLY
	DOCUMENTATION CHECKLIST						RECEIVED)
				YES	NO	YES	NO	DATE
	COMPLIANCE PROGRAM				Х			
_	MASTER DRAWING LIST FLIGHT MANUAL SUPPLEMENT			X				
_	MAINTENANCE MANUAL SUPPLEMENT			Х	X			
	INSTRUCTIONS FOR CONTINUING AIRWORTHINESS			х	^			
	ENGINEERING REPORTS			X				
_	DESIGN DRAWINGS				X			
	MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTION	IS		x				
	ELECTRICAL LOAD ANALYSIS				Х			
	DRAFT STC, LSTC OR RDA				Х			
	WEIGHT AND MOMENT CHANGE			х				
	FLIGHT TEST DATA				Х			
	OTHER (Specify)							
9.	APPLICANT'S REMARKS:							
10.	In addition to the payment of Aircraft Certification approval fees as prescribincremental expenses as in Aviation Regulation Directive No. 3, or equival	bed in Ca lent, as ap	nadian Aviation Regula oplicable. For further d	ations (CAR) S details governi	Section 104, ng cost reco	I agree to reinvery, refer to A	nburse Transp AMA 513/4.	oort Canada
	DEB!	0.5	neultant				27 July 2	010
	PER: SIGNATURE OF APPLICANTS	TITLE	nsultant 				27 July, 2	
11.	Conduction of the Florida	11111					5.116	
	SIGNATURE OF REGIONAL ENGINEER						DATE	

C.G. LOCATION - LEVELING - ALIGNMENT - WEIGHING

AS350 Ballast

Correction of aircraft c.g.

1 EQUIPMENT REQUIRED

Also refer to "EQUIPMENT REQUIRED" section of documents referenced in 1.4.

1.1 Tools

None

1.2 Materials

None

1.3 Routine replacement parts

- Weight (1) IPC 55.20.10.01

Quantity: as per type of ballast loading used (See para. 6).

1.4 Applicable documents

Maintenance Manual (MET) Work Card 08.00.00.603.

2 PURPOSE

This operation modifies the Equipped Empty Weight (Operational Empty Weight) of the aircraft and enables C.G. to be held within the permissible range when operating at full load. It allows the User to vary the C.G. after special or optional equipment items are installed or in case of unusual loading.

CAUTION: FURTHER TO THIS OPERATION, AMEND THE FOLLOWING DOCUMENTS:

- THE APPENDIX A3 (WEIGHT AND BALANCE) OF THE FLIGHT MANUAL FOR THE AS 350 B AND D AIRCRAFT,
- THE WEIGHT AND BALANCE RECORD FOR THE AS 350 BA, BB, B1 AND B2 R AIRCRAFT.

3 PRINCIPLE

WARNING

THIS METHOD IS NOT APPLICABLE UNLESS THE FOLLOWING MODIFICATIONS HAVE BEEN EMBODIED ON THE AIRCRAFT.

- 07-0475 PROVISIONS FOR MOUNTING A 1.3-TO-5-KG BALLAST IN THE TAIL BOOM REAR FAIRING
- 07-0476 REINFORCEMENT OF THE TAIL BOOM FOR A BALLAST HIGHER THAN 5 KG
- 07-0477 PROVISIONS FOR MOUNTING A 5-TO-15-KG BALLAST IN THE TAIL BOOM REAR FAIRING (Post Mod. 07.0476)
- 07-1047 REINFORCEMENT OF FIN SPLICE-PLATES TO INCREASE THE CALCULATION RANGES
- 07-1364 REINFORCEMENT OF THE TAIL BOOM REAR FAIRING FOR MOUNTING A 20-KG BALLAST
- Depending on the aircraft weight and C.G. configuration found by weighing, determine the type of ballast loading required.
 350

08.00.00.

AS 350 B - BA - BB - B1 - B2 - D : Fig. 1

R

The type of ballast loading defines :

- The number of ballast discs required.
- The position of the discs : on the rear frame or in the tail boom rear fairing.

4 PROCEDURE

- 4.1 Weigh the aircraft without ballast (W.C. 08.00.00.603) to determine :
 - .operational Empty Weight (O.E.W) or (E.E.W)
 .centre of gravity (C.G.)
- 4.2 a) Enter the aircraft empty weight on the LH side of the chart.
 - . Draw a horizontal line (A) parallel to the weight lines on the chart.
 - b) Enter the aircraft C.G. at the bottom of the chart.
 - . Draw a line (B) parallel to the centre of gravity lines on the chart.
 - c) The point of intersection (1) of lines (A) and (B) defines the type of installation.
- 4.3 Refer to the table on the following page and note, for the appropriate ballast loading type :
 - .the number of disks and their position.
 - .weight and moment of the ballast.
- 4.4 Calculate the new Equipped (Operating) Empty Weight and the new C.G. locations using weight and moment data on chart page 3. Enter the new values on chart (Fig. 1). The point of intersection (2) should be within "NO BALANCE WEIGHT" area. If this is not the case, check all values and re-calculate the Empty Weight.

This method is applicable to all aircraft versions : use the corresponding charts.

- 4.5 Secure the ballast weights: Fig. 2
 - . to the fin spars (see DETAIL A)
 - . in the tail boom rear fairing (DETAIL B) ; divide the ballast equally on fore and aft faces of the frame.

CAUTION: THE LENGTH OF THE ATTACHING SCREWS MUST BE ADAPTED TO THE NUMBER OF DISKS

EXAMPLE

Aircraft mission with pilot, copilot and four passengers (Figure 1)

C.G. WEIGHT MOMENT - Helicopter weighed without ballast 1119.5 Kg 3954.07 mkg 3.532 m CORRECT AS FOLLOWS :

- Point 1 on chart

- Use .04 assembly (para. 6)

. one plate on the rear frame

.two plates in the tail boom rear fairing

- Weight and moment of ballast : 5.9 Kg 59.27 mkg - Ballasted helicopter : 1125.4 Kg 4013.34 mkg

- C.G. : Moment = 4013.34Weight 1125.4

= 3.566 m

R

R

R

- Plot this point on the chart - point 2

- This point represents the centre of gravity of the ballasted helicopter For versions : B and D

- Refer to Flight Manual Appendix No. 3.

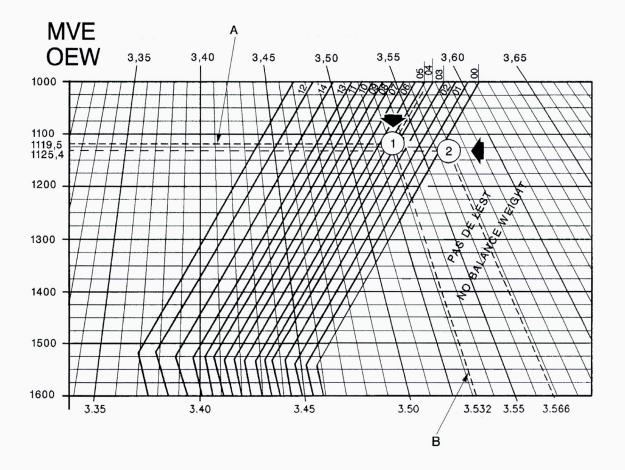
For versions: B1, B2, BA, BB, L1

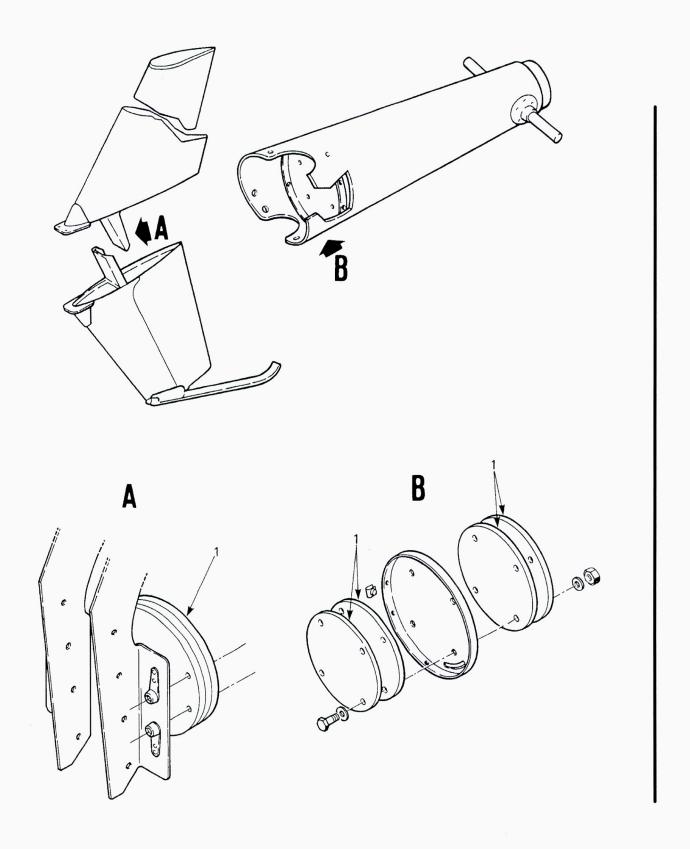
- Refer to Flight Manual section 6.

TYPES OF BALLAST LOADING TO BE USED

TYPE OF NUMBER OF DISKS			BAL	LAST
BALLAST	ON STUB SPARS (DETAIL A)	IN TAIL BOOM REAR FAIRING (DETAIL B)	Weight in kg	Moment in mkg
00 01 02 03	1 2 3 4	O O O	1.3 2.5 3.7 4.9	12.71 24.65 36.87 48.84
04 05 06 07	1 2 3 4	2 2 2 2	5.9 7.1 8.3 9.5	59.27 71.20 83.43 95.39
08 09 10 11 13 14	1 2 3 4 4 4	4 4 4 4 5 6 7 350	10.4 11.6 12.8 14.0 16.3 18.5 20.8	105.02 116.96 129.18 141.14 164.73 186.94 209.65 08.00.00.

B-BA-BB-B1-B2-D





$$W_{cargo} := 240 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 300lbf$$

Combined weight of basket and cargo

$$P_{lim\ man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1050lbf$$

Limit maneuvering load

$$P_{ult\ man} := P_{basket} \cdot n_{man\ ult}$$

$$P_{ult_man} = 1575lbf$$

Ultimate maneuvering load

$$W_{cargo} := 250 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 310lbf$$

Combined weight of basket and cargo

$$P_{lim\ man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1085lbf$$

Limit maneuvering load

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1628lbf$$

Ultimate maneuvering load

5.2 Drag Load

The drag on the large basket is critical. It is used for all tests.

$$\rho := 0.002378 \frac{slug}{ft^3}$$

Density of air at Sea Level.

 $V_{ne} := 155 \cdot knots$

Never-Exceed-Speed of AS350B3.

(Ref. AS350 TCDS) (Highest of AS350/AS355 Series)

$$V_d := \frac{V_{ne}}{0.9}$$

$$V_d = 172 knots$$

Design Dive Speed of AS350B3

 $l_{basket} := 97 \cdot in$

Length of basket.

 $w_{basket} := 22.5 in$

Width of basket

 $h_{basket} := 19.25 in$

Height of basket.

 $A_f := 376 \text{ in}^2$

Frontal Area of basket.

 $A_p := I_{basket} \cdot w_{basket}$

$$A_p = 2183 in^2$$

Planar Area of basket.

$$\frac{l_{\text{basket}}}{w_{\text{basket}}} = 4.3$$

Fineness ratio of basket

 $C_{Do} := 1.1$

Drag Coefficient of Basket, (overestimated) (Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

$$P_{drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f \cdot C_{Do}$$

$$P_{drag} = 289lbf$$

Limt Drag on basket.

 $P_{drag_ult} := P_{drag} \cdot n_{sf}$

$$P_{drag\ ult} = 433lbf$$

Ultimate Drag load on basket

$$AC_{drag} := 48.4 \text{ in}$$

Lateral Aerodynamic Center of basket. (Low configuration)

5.1 **Inertia Loads**

Cargo loads are incremented by 10 lbs up to 250 lbs for the medium and long configurations.

5.1.1 Cargo Basket 77601 (Short Basket)

The inertia load for the short basket is highest, and will be used for testing of the light wall beams. The basket has already been demonstrated to carry 300 lbs cargo at ultimate load.

$$W_{basket} := 40 \cdot lbf$$

$$W_{cargo} := 300 \, lbf$$

$$P_{\text{basket}} = 3401bf$$

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1190lbf$$

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1785lbf$$

5.1.2 Cargo Basket 76401 (Medium Basket)

$$W_{basket} := 45 \cdot lbf$$

$$W_{cargo} := 200 \, lbf$$

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 245lbf$$

$$P_{lim\ man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 858lbf$$

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1286lbf$$

5.1 Inertia Loads

Cargo loads are incremented by 10 lbs up to 250 lbs for the medium and long configurations.

5.1.1 Cargo Basket 77601 (Short Basket)

The inertia load for the short basket is highest, and will be used for testing of the light wall beams. The basket has already been demonstrated to carry 300 lbs cargo at ultimate load.

$$W_{basket} := 40 \cdot lbf$$

Weight of short basket configuration

$$W_{cargo} := 300 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 3401bf$$

Combined weight of basket and cargo

$$P_{lim man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1190lbf$$

Limit maneuvering load

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1785lbf$$

Ultimate maneuvering load



5.1.2 Cargo Basket 76401 (Medium Basket)

Weight of medium basket configuration

$$W_{cargo} := 200 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 245lbf$$

Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim_man} = 858lbf$$

Limit maneuvering load

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1286lbf$$

Ultimate maneuvering load

New Euroceptur Pool clamps.

$$l_{basket} := 97 \cdot in$$

 $w_{basket} := 22.5 in$

 $h_{basket} := 19.25 in$

$$A_f := 376 \text{ in}^2$$

$$A_p := l_{basket} \cdot w_{basket}$$

$$A_p = 2183 in^2$$

$$\frac{l_{\text{basket}}}{w_{\text{basket}}} = 4.3$$

$$C_{Do} := 1.1$$

$$P_{drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f C_{Do}$$

$$P_{drag} = 289lbf$$

$$\text{450 V} \begin{array}{c} P_{drag_ult} := P_{drag} \cdot n_{sf} \\ P_{drag_ult} = 433 \text{lbf} \end{array}$$

$$AC_{drag} := 48.4 \text{ in}$$

Length of basket.

Width of basket

Height of basket.

Frontal Area of basket.

Drag Coefficient of Basket, (overestimated) (Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

Limt Drag on basket.

Ultimate Drag load on basket

Lateral Aerodynamic Center of basket.

(Low configuration)





1100-9700 Jasper Avenue Edmonton, Alberta T5J 4E6

March 22, 2010

Your file 764

Votre reference

Our file Notre reference C-10-0102 SH08-16

Aero Design Ltd. 2013 39th Avenue North East Calgary, Alberta Canada, T2E 6R7

ATTENTION: EDWARD BURGOIN

Dear Sirs:

SUBJECT:

REVISION OF SUPPLEMENTAL TYPE CERTIFICATE NO. SH08-16 – ISSUE 2

DATED MARCH 22, 2010 – INSTALLATION OF EXTERNAL ATTACHMENT PROVISIONS AND CARGO BASKET – EUROCOPTER AS 350B, B1, B2, B3,

BA, AS350D, D1

EUROCOPTER FRANCE AS 355E,F,F1,F2, N, NP ISSUED TO AERO DESIGN

LTD.

This Supplemental Type Certificate (STC) is issued in response to your application. Included with the STC are the documents bearing the original Transport Canada signatures.

The transfer of this SH08-16 Issue 2 in the name of another person requires the prior approval from the Minister in accordance with Canadian Aviation Regulations (CAR) 521.357.

The requirements of CAR 561 apply where parts are manufactured and offered for sale. The provisions of CAR 571.06(4) should also be consulted.

A Canadian holder is required to fulfill the responsibilities of a Design Approval Document Holder in accordance with CAR 521, Division VIII, including the reporting of any service problems experienced with their product. Therefore, should you become aware of any defect, malfunction or failure resulting from the design change, it is your responsibility to submit a Service Difficulty Report to Transport Canada.

Yours truly.

D.S. Austen

Senior Engineer, Aircraft Certification

Prairie and Northern Region Phone: 780-495-5226

Facs: 780-495-7963

Encl.



MODIF	ICATION APPROV	AL RE	QUEST AF	PLICA	TION F	ORM	MOD	764, Rev.	
	2. IDENTIFICATION OF PRODUCT						C-10-0102.		
AERO Design Ltd. 2013 - 39th Avenue NE	esign Ltd. MAKE:			The second name of the second na	MODEL:				
Calgary, Alberta T2E 6R7	Eurocopter				AS350 (all models) AS355 (all models)				
ALL CORRESPONDANCE TO: AERO Design Ltd.	ALL CORRESPONDANCE TO: AERO Design Ltd. SERIAL No.:			RI	EGISTRATIC	N:			
2013 - 39th Avenue NE Calgary, Alberta		All	eligible			All eligible	9		
T2E 6R7									
3. REQUEST FOR:					The second state of the second second				
A. SUPPLEMENTAL TYPE CER	TIFICATE (STC)								
B. STC/STA REVISION		\boxtimes	STC/STA No. S	H08-16	C-	10-0/0	2		
C. LIMITED SUPPLEMENTAL T	PE CERTIFICATE (LSTC)								
D. LIMITED STC/STA REVISION			LSTC/LSTA No.						
E. F.A.A. SUPPLEMENTAL TYP	E CERTIFICATE								
F. F.A.A. STC REVISION			STC No.						
G. FAMILIARIZATION OF F.A.A.	STC		STC No.						
H. REPAIR DESIGN APPROVAL	(RDC)								
I. PARTS DESIGN APPROVAL	(PDA)								
TITLE OF MODIFICATION OR REI Quick Release Cargo Basket Install			THE REAL PROPERTY OF THE PROPE	erek arminasti interantasi menasarra asaar	AVVAATINCES LEBENDE VERVEN DE V				
5. BRIEF DESCRIPTION OF MODIFIC						The state of the s	CONTRACTOR Chicken Care Creater	MARKET CONTRACTOR	
Installation of external attachment p	rovisions; Installation of cargo	basket.							
6. APPLICABLE TYPE APPROVAL (FA) OD TVDE OFFICIOATE	(TO) DOO				The Control of the state of the			
	. TC No.		OTHER						
7. PROPOSED BASIS OF APPROVA									
A. SAME AS TA 🛛 B	. SAME AS TC	C.	OTHER	(Please	specify)				
8.		A CONTRACTOR OF THE PARTY OF TH		REQL	JIRED	FOR	DOT USE	ONLY	
DOCUME	NTATION CHECKLIST					RECEIVED)	
COMPLIANCE PROCESSA				YES	NO	YES	NO	DATE	
COMPLIANCE PROGRAM MASTER DRAWING LIST					X				
FLIGHT MANUAL SUPPLEMENT				X					
MAINTENANCE MANUAL SUPPLE	MENT			Х					
INSTRUCTIONS FOR CONTINUING		ALL AND COMMENTS AND ADDRESS OF THE PARTY OF		V	Х				
ENGINEERING REPORTS				X					
DESIGN DRAWINGS				^	Х				
MANUFACTURE DRAWINGS & INS	TALLATION INSTRUCTIONS	3		Х		B			
ELECTRICAL LOAD ANALYSIS				THE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS	X			Market Control	
DRAFT STC, LSTC OR RDA		A Company of the Comp			X				
WEIGHT AND MOMENT CHANGE				Х	de de descripción de la ministra de la companya de				
FLIGHT TEST DATA		THE RESERVE OF THE PERSON OF T			Х				
OTHER (Specify)									
9. APPLICANT'S REMARKS:						Adrian Charles and Charles and Charles	in the second		
In addition to the payment of Aircraft Certi incremental expenses as in Aviation Regu	fication approval fees as prescribed lation Directive No. 3, or equivalent	d in Canadi nt, as applica	an Aviation Regulat able. For further de	ions (CAR) S tails governin	ection 104, I	agree to reimb	ourse Transpo MA 513/4.	ort Canada	
M ()	•								
PER: A		Consult	tant				2 February	, 2010	
SIGNATURE OF APPLICANTS 11.		TITLE			- Mirani waka ana		DATE	William Color Bull Chalest Connection Co.	
SIGNATURE OF REGIONAL ENGINEER IN	Tel.					18	MAR	2009	

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT - CAR 527

BLOCK 1

Name of the applicant for the design change approval:

Aero Design Ltd.

Description of the design change:

Installation of Quick Release Cargo Basket on Eurocopter AS350 & AS355 Series

Certification Basis of design change and revision date:

FAR 27, Amendment 27-20

CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:

Section 0-3 of Supplemental ICA (ICA 764.90)

CAR Standard 513.05 (1) (g) (iv): Installation Instructions:

Installation Drawing 76401, 77601, 78401, 78601

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) (a) The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: Eurocopter AS350/AS355 Maintenance Manuals	Supplemental ICA ref: Single Manual (ICA764.90)
A527.2 (b) Practical arrangement (b) The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: Eurocopter Description and Operation Manual	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions. A527.3 (b) (1) Scheduling		
1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 25	Supplemental ICA ref: Section 25-1 thru 25-4
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 7 and 8	Supplemental ICA ref: Section 25-5
A527.3 (c) Access (c) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections (d) Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 5	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment (e) Information needed to apply protective treatments to the structure after inspection.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc (f) All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: Eurocopter Standard Practices Manual, Chapter 20	Supplemental ICA ref: Section 25-6
A527.3 (g) Special tools (g) A list of special tools needed.	ICA ref: Eurocopter Tools Catalog	Supplemental ICA ref: N/A

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness							
A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: Eurocopter AS350/AS355 Maintenance Manual, Chapter 4	Supplemental ICA ref: Chapter 4					
BLOCK 4 – Applicant Statement of Compliance							
that supports this change in type design. Applicants Signature:	the complete listing of supplemental ICA necess	ary to show compliance with the regulatory standard Date:					
Applicants Name: E. Burgoin, P.Eng, DAR 290M							

BLOCK 5 - Minister's Statement of Acceptability The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister. Email: @tc.ge.ca Mail Routing Symbol: RAED Reviewer's Name: 5. STAAL Phone # 780 - 495 - 5227

Signature: Staal. Date: 22 MARCH ZOLO **NAPA Number**

C-10-0102

AS350 & AS355 SERIES HELICOPTERS

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

for the

INSTALLATION of the AERO DESIGN QUICK RELEASE CARGO BASKET AND/OR QUICK RELEASE MAINTENANCE STEP

CARGO BASKET MODELS: 76401, 77601, 78401

TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory. Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Cargo Basket Installation and/or Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.

Transport Transports Canada

AIRCRAFT CERTIFICATION DIVISION

APPROVED

By D. S. Cluster

Approval Date 10-03-22

YY-MM-DD

Revision 1 29 January, 2010 Page 1
TRANSPORT CANADA APPROVED

Table of Contents

1	Limitations	3
П	Normal Procedures	3
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Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	Ву
0	25 Feb, 2008	None		
1	29 Jan, 2010	All		
	,			

I LIMITATIONS

- 1. The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Models 764 and 784 is 250 lb. (113 kg). The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Model 776 is 300 lb. (135.7 kg).
- 2. Only one basket may be installed on the helicopter, on the right or left side.
- Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
- 4. V_{NE} is unchanged from the basic rotorcraft.
- 5. AS355NP only: For Category A operations, the basket must be removed. Mounting provisions may be left in place.

II NORMAL PROCEDURES

- 1. Pre-flight inspections:
 - Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - c) Ensure the basket is locked in postion on the beams. Pull up on the forward and aft end of the basket to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

- Cruise performance and range will be reduced by approximately 8 percent with the Cargo Basket Installed.
- 2. AEO climb performance will be reduced by up to 150 fpm.

Revision 1 29 January, 2010 TRANSPORT CANADA APPROVED

MAR 2 2 2010

V WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 76401, 77601, and 78401. Each model has multiple configurations. Refer to the weight and balance information applicable to model and configuration installed.

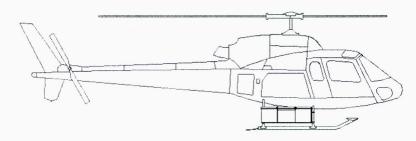
Weight and balance is for Cargo Basket only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

Longitudinal and Lateral moment arms for Cargo are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

1. **MODEL 77601 (Short Basket)**. The following weight and balance is for the cargo basket installed in accordance with drawing 77601.

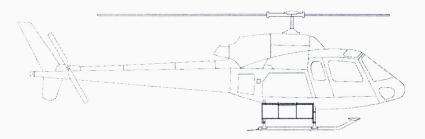


A) Configuration 77601-01 (Short Basket, Low mounted)

Standard

P/N	Description	Weight	Longitudinal		Lateral				
			arm	moment	arm	moment			
		lb	in	in-lb	in	in-lb			
77610-01	Basket (RH)	35.0	135.7	4749.5	48.1	1683.5			
	Maximum Cargo (RH)	300.0	135.7	40710.0	48.1	14430.0			
77610-01	Basket (LH)	35.0	135.7	4749.5	-48.1	-1683.5			
	Maximum Cargo (LH)	300.0	135.7	40710.0	-48.1	-14430.0			

mount							
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
77610-01	Basket (RH)	15.8	3446.8	54587.0	1221.7	19348.8	
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1221.7	165784.7	
			-				
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1221.7	-19348.8	
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1221.7	-165784.7	



B) Configuration 77601-03 (Short Basket, Mid mounted)

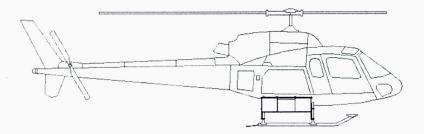
Standard

Culturia								
P/N	Description	Weight	Longitudinal		Lateral			
			arm	moment	arm	moment		
		lb	in	in-lb	in	in-lb		
77610-01	Basket (RH)	35.0	135.7	4749.5	46.5	1627.5		
	Maximum Cargo (RH)	300.0	135.7	40710.0	46.5	13950.0		
77610-01	Basket (LH)	35.0	135.7	4749.5	-46.5	-1627.5		
	Maximum Cargo (LH)	300.0	135.7	40710.0	-46.5	-13950.0		

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
77610-01	Basket (RH)	15.8	3446.8	54587.0	1181.1	18705.2
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1181.1	160275.3
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1181.1	-18705.2
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1181.1	-160275.3

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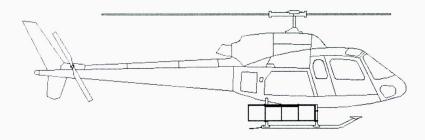
C) Configuration 77601-02 (Short Basket, High mounted)

Standard

014114414						
P/N	Description	Weight	Longitudinal		Lateral	
	*		arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
77610-01	Basket (RH)	35.0	135.7	4749.5	45.6	1596.0
	Maximum Cargo (RH)	300.0	135.7	40710.0	45.6	13680.0
77610-01	Basket (LH)	35.0	135.7	4749.5	-45.6	-1596.0
	Maximum Cargo (LH)	300.0	135.7	40710.0	-45.6	-13680.0

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
77610-01	Basket (RH)	15.8	3446.8	54587.0	1158.2	18343.2
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1158.2	157167.7
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1158.2	-18343.2
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1158.2	-157167.7

2. **MODEL 76401 (Medium Basket)**. The following weight and balance is for the cargo basket installed in accordance with drawing 76401.

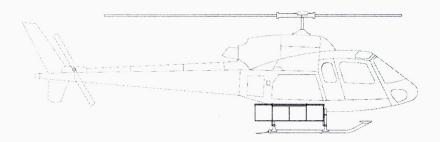


A) Configuration 76401-01 (Medium Basket, Low Mounted)

Standard

Otalida d						
P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	48.6	2187.0
	Maximum Cargo (RH)	250.0	144.9	36225.0	48.6	12150.0
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-48.6	-2187.0
	Maximum Cargo (LH)	250.0	144.9	36225.0	-48.6	-12150.0

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1234.4	25135.7
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1234.4	139610.6
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1234.4	-25135.7
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1234.4	-139610.6



B) Configuration 76401-03 (Medium Basket, Mid Mounted)

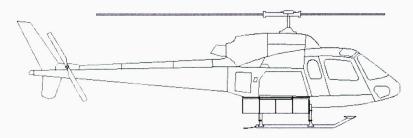
Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	47.0	2115.0
	Maximum Cargo (RH)	250.0	144.9	36225.0	47.0	11750.0
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-47.0	-2115.0
	Maximum Cargo (LH)	250.0	144.9	36225.0	-47.0	-11750.0

motrio						
P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1193.8	24308.1
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1193.8	135018.8
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1193.8	-24308.1
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1193.8	-135018.8

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C) Configuration 76401-02 (Medium Basket, High Mounted)

Standard

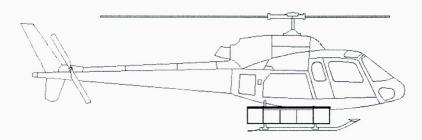
- 1-11-1-11						
P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	46.1	2074.5
	Maximum Cargo (RH)	250.0	144.9	36225.0	46.1	11525.0
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-46.1	-2074.5
	Maximum Cargo (LH)	250.0	144.9	36225.0	-46.3	-11525.0

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1170.9	23842.7
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1170.9	132428.8
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1170.9	-23842.7
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1170.9	-132428.8

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3. **MODEL 78401 (Long Basket)**. The following weight and balance is for the cargo basket installed in accordance with drawing 78401.

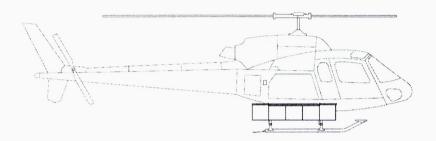


A) Configuration 78401-01 (Long Basket, Low Mounted)

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78410-01	Basket (RH)	57.5	135.7	7802.8	48.4	2783.0
	Maximum Cargo (RH)	250.0	135.7	33925.0	48.4	12100.0
78410-01	Basket (LH)	57.5	135.7	7802.8	-48.4	-2783.0
	Maximum Cargo (LH)	250.0	135.7	33925.0	-48.4	-12100.0

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78410-01	Basket (RH)	26.0	3446.8	89678.7	1229.4	31985.6
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1229.4	139045.1
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1229.4	-31985.6
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1229.4	-139045.1



B) Configuration 78401-03 (Long Basket, Mid Mounted)

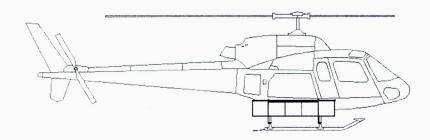
Standard

	Othinana						
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		lb	in	in-lb	in	in-lb	
78410-01	Basket (RH)	57.5	135.7	7802.8	47.0	2702.5	
	Maximum Cargo (RH)	250.0	135.7	33925.0	47.0	11750.0	
78410-01	Basket (LH)	57.5	135.7	7802.8	-47.0	-2702.5	
	Maximum Cargo (LH)	250.0	135.7	33925.0	-47.0	-11750.0	

Metric							
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
78410-01	Basket (RH)	26.0	3446.8	89678.7	1193.8	31060.4	
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1193.8	135018.8	
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1193.8	-31060.4	
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1193.8	-135018.8	

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C) Configuration 78401-02 (Long Basket, High Mounted)

Standard

	Standard						
P/N	Description	Weight	Longitudinal		Lateral		
			arm	moment	arm	moment	
		lb	in	in-lb	in	in-lb	
78410-01	Basket (RH)	57.5	135.7	7802.8	46.1	2650.8	
	Maximum Cargo (RH)	250.0	135.7	33925.0	46.1	11525.0	
78410-01	Basket (LH)	57.5	135.7	7802.8	-46.1	-2650.8	
	Maximum Cargo (LH)	250.0	135.7	33925.0	-46.1	-11525.0	

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78410-01	Basket (RH)	26.0	3446.8	89678.7	1170.9	30465.6
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1170.9	132428.8
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1170.9	-30465.6
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1170.9	-132428.8

VI INSTALLATION / REMOVAL INSTRUCTIONS

Cargo Baskets

The beams are installed in accordance with 78601. The basket is installed in accordance with drawing 76401, 77601 or 78401, as applicable. Removal of the basket leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket and which weight and balance amendment is in effect is required when basket is installed or removed.

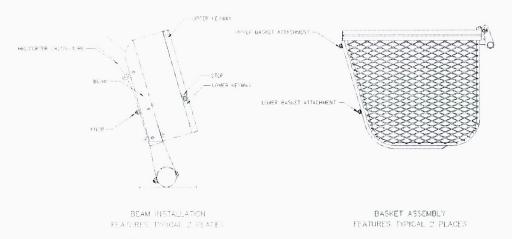


Figure 1 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical for low and high beam installations)

- 4. Installation Refer to Figure 1 and Figure 2.
 - a) Set basket upper attachment into upper keyway in forward and aft beams.
 - b) At forward attachment hoop, lift basket until lower attachment fitting hits stop.
 - c) Push fitting into keyway and slide basket down until locked.
 - d) Repeat step a,b and c for aft attachment hoop.

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- 2. Removal Refer to Figure 1 and Figure 2.
 - a) Pull knob at bottom end of forward beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
 - b) Pull knob at bottom end of aft beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
 - c) Lift basket until upper attachments are out of keyways on both beams and remove basket from helicopter.

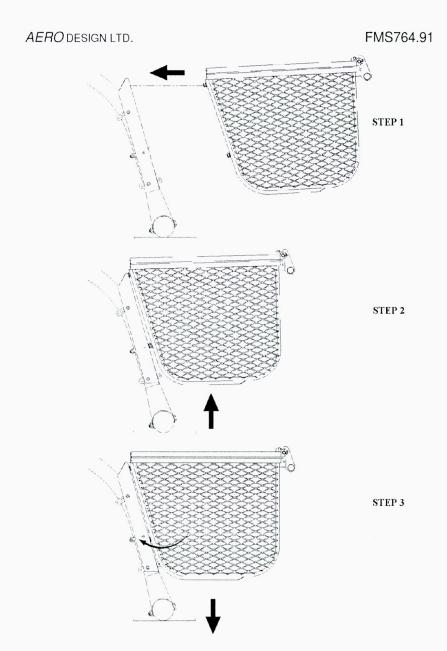


Figure 2 – Basket Attachment Steps (Low basket installation shown. Installation instructions typical for low and high basket installation).



Department of Transport

Supplemental Type Certificate

This approval is issued to: SH08-16

Aero Design Ltd. | Issue No.: 1

2013 39th Avenue North East Approval Date: April 11, 2008

Calgary, Alberta Issue Date: April 11, 2008

Canada T2E 6R7

Responsible Office: Prairie and Northern

Aircraft/Engine Type or Model: EUROCOPTER AS 350 B, AS 350 B1, AS 350 B2, AS 350 B3,

AS 350 BA, AS 350 D, AS 350 D1,

EUROCOPTER FRANCE AS 355 E, AS 355 F, AS 355 F1, AS

355 F2, AS 355 N, AS 355 NP

Canadian Type Certificate or Equivalent: H-83, H-87

Description of Type Design Change: Installation of External Attachment Provisions and Cargo

Basket.

Installation/Operating Data, Required Equipment and Limitations:

Configuration A – External Attachment Provisions Only:

Installation of External Attachment Provisions to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL786-1, Revision 0, dated 06 March 2008, or later approved revision.

External Attachment Provisions installed in accordance with DCL786-1 may remain installed if the basket installation is removed.

Configuration B - External Cargo Basket (Short Basket):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration B, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL776-1, Revision 0, dated 06 March 2008, or later approved revision.

...See Continuation Sheet

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.

modifi

D.S. Austen

For Minister of Transport

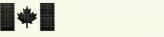


TRANSFER ENDORSEMENT

A transfer of ownership requires a prior approval from the Minister.

The reissue of the certificate in the name of the transferee will be contingent upon a demonstration made by the new owner that he/she can fulfill the responsibilities of the holder as described in airworthiness manual chapter 513.

TRANSFER OF OWNERSHIP		
TO (NAME AND ADDRESS OF	F TRANSFEREE)	
FROM (NAME AND ADDRESS	S OF OWNER)	
TRANSFER PARTICULARS (I AGREEMENT, SALE OF RIGH		
DATE OF TRANSFER		
		70
	SIGNATURE (OF ORIGINAL OWNER)	Thy .



(Continuation Sheet)

Number: SH08-16 Issue 1

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Configuration C – External Cargo Basket (Short Basket – Alternate):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration C, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL776-2, Revision 0, dated 06 March 2008, or later approved revision.

Configuration D - External Cargo Basket (Medium Basket):

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration D, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL764-1, Revision 0, dated 06 March 2008, or later approved revision.

Configuration E - External Cargo Basket (Long Basket)

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration E, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL784-1, Revision 0, dated 06 March 2008, or later approved revision.

Configuration F - External Cargo Basket (Long Basket - Alternate)

Installation of Configuration A, External Attachment Provisions, is a prerequisite for installation of Configuration F, External Cargo Basket Installation. Installation of Quick Release Cargo Basket to be completed in accordance with Transport Canada approved, AERO Design Ltd. Document Control List, DCL784-2, Revision 0, dated 06 March 2008, or later approved revision.

Cargo Basket Modifications:

Modifications to the Cargo Basket configurations are eligible in accordance with Transport Canada approved, AERO Design Ltd., Document Control List DCL704, Revision 2, dated 19 March 2008, or later approved revision. Eligibility limitations are noted on the drawings.

Data Pertinent to All Configurations:

Transport Canada approved, AERO Design Ltd. Flight Manual Supplement FMS764-91, Revision 0, dated 25 February 2008, or later approved revision is required with this installation.

...See Continuation Sheet



(Continuation Sheet)

Number: SH08-16 Issue 1

NOTE: THIS ADDENDUM SHALL REMAIN PART OF THE CERTIFICATE REFERRED TO THEREIN.

Transport Canada accepted, AERO Design Ltd. Instructions for Continued Airworthiness ICA764-90, Revision 0, dated 25 February 2008, or later accepted revision is required with this installation.

Basis of Certification: FAR 27 amendment 20, plus select paragraphs of amendment 21 (AS355NP basis not including Cat A). Airworthiness Manual Chapter 527.1581 – SI units.

- End -

DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS			
78601	Basket Installation F	1	
ICA764.90	Instructions for Con	0	
FABRICATION DOCUMENTS			
DCL786-3	Document Control L	ist - Provision Assembly	1
ENGINEERING DOCUMENTS			
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INSTALLATION DOCUMENTS FABRICATION DOCUMENTS 78620 78630 78631	Clamp Assembly Low Beam Fabricat High Beam Fabricat		0 0 1
ENGINEERING DOCUMENTS ER764.01 TR764.02 FTP764.03	Engineering Report Load Test Plan/Rep Flight Test Plan/Rep	port	0 0 0
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION
INSTALLATION DOCUMENTS			
77601	Quick Release Carg	go Basket Installation	1
ICA764.90	Instructions for Con	tinued Airworthiness	0
FMS764.91	Flight Manual Supp	lement	1
FABRICATION DOCUMENTS			
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77602	Quick Release Carg	go Basket Installation	1
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FMS764.91	Flight Manual Supp	lement	1
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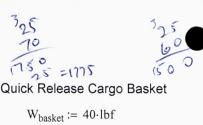
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ICA764.90	Instructions for Con	tinued Airworthiness	0
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Weight of short basket configuration -77602 (61.25" long)

Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 240 \, lbf$

Combined weight of basket and cargo

 $P_{lim\ man} := P_{basket} \cdot n_{man}$

 $P_{lim\ man} = 840 \, lbf$

 $W_{cargo} := 200 \cdot lbf$

Limit maneuvering load

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1260 \, lbf$

Ultimate maneuvering load

1250 lead + 460 drag.

no pennanent deformation
or fived beam / stight on aft
due to cargo

 $P_{lim_cargo_neg} := W_{cargo} \cdot n_{man_neg}$

 $P_{lim_cargo_neg} = -200 lbf$

Limit negative maneuvering load due to cargo

 $P_{ult \ cargo \ neg} := W_{cargo} \cdot n_{man \ neg \ u}$

 $P_{\text{ult cargo neg}} = -300 \, \text{lbf}$

Ultimate negative maneuvering load due to cargo

Wbasket := 40·lbf

Wcargo := 300·lbf

Weight of short basket configuration -77602 (61.25" long)

Weight of cargo (max)

Phasket:= Wbasket + Wcargo

 $P_{basket} = 340 \, lbf$

Combined weight of basket and cargo

 $P_{\text{lim}} = P_{\text{basket}} \cdot n_{\text{man}}$

 $P_{lim\ man} = 1190 \, lbf$

Limit maneuvering load

Pult man := Pbasket nman_ult

 $P_{\text{ult man}} = 1785 \, \text{lbf}$

1775 lead

Ultimate maneuvering load

Limit negative maneuvering load due to cargo

Plim_cargo_neg := Wcargo nman_neg

 $P_{lim \ cargo \ neg} = -300 \ lbf$

ful beam slight permant def.

Pult cargo neg:= Wcargo nman_neg_u

 $P_{ult\ cargo\ neg} = -450 \, lbf$

Ultimate negative maneuvering load due to cargo

aft bean ~ 1/8" def.

load Front Rear 303/4 _ clamps Shifted 30 29/12 - 1250 15.

29 28 7/8 - 1775 b.

DRAG LOAD ON BASKET

$$\rho := 0.002378 \cdot \frac{slug}{ft^3}$$

Density of air at Sea Level.

 $V_{ne} := 155 \cdot knots$

Never-Exceed-Speed of AS350B3.

(Ref. AS350 TCDS)

(Highest of AS350/AS355 Series)

$$V_d := \frac{V_{ne}}{0.9}$$

 $V_{\rm d}$ = 172 knots Design Dive Speed of AS350B3

 $l_{basket} := 61.25 \cdot in$

Length of basket.

 $w_{basket} := 22.5 \cdot in$

Width of basket

 $h_{basket} := 19.25 \cdot in$

Height of basket.

$$A_f := 362 \cdot in^2$$

Frontal Area of basket.

 $A_p := 1_{basket} \cdot w_{basket}$

$$A_p = 1378 \text{ in}^2$$

Planar Area of basket.

 $\frac{l_{basket}}{w_{basket}} = 2.7$

Fineness ratio of basket

 $C_{Do} := 1.1$

Drag Coefficient of Basket, (overestimated) (Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

$$P_{drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f C_{Do}$$

$$P_{drag} = 278 \, lbf$$

Limit Drag on basket.

 $P_{drag_ult} := \ P_{drag} {\cdot} n_{sf}$

$$P_{drag\ ult} = 417 \, lbf$$

Ultimate Drag load on basket

 $AC_{drag} := 48.4 \cdot in$

Lateral Aerodynamic Center of basket. (Low configuration, furthest outboard)

Quick Release Cargo Basket

 $W_{basket} := 45 \cdot lbf$

 $W_{cargo} := 200 \cdot lbf$

Weight of medium basket configuration -76401 (75.75" long)

Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 245 \, lbf$

Combined weight of basket and cargo

B 30F 25 1612

su bays

 $P_{lim_man} := P_{basket} \cdot n_{man}$

 $P_{lim\ man} = 858 \, lbf$

Limit maneuvering load

51 bags

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1286 \, lbf$

Ultimate maneuvering load

Whasket := 45·lbf

Wcargo := 210·lbf

Weight of medium basket configuration -76401 (75.75" long)

Weight of cargo (max)

 $\begin{array}{ll} P_{basket} \coloneqq W_{basket} + W_{cargo} \end{array}$

 $P_{basket} = 255 \, lbf$

Combined weight of basket and cargo

875 15 35 bays Plinaman:= Pbasket nman

 $P_{lim_man} = 893 lbf$

Limit maneuvering load

1 +300 drag

132515 53 bags. Pult_man = Pbasket nman_ult

 $P_{ult_man} = 1339 \, lbf$

Ultimate maneuvering load 🗸

Whasket := 45·lbf

 $W_{cargo} = 220 \cdot lbf$

Weight of medium basket configuration -76401 (75.75" long)

Weight of cargo (max)

Phasket

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 265 \, lbf$

Combined weight of basket and cargo

900 lb.

Plimman:= Pbasket nman

 $P_{lim\ man} = 928 \, lbf$

Limit maneuvering load

V + 300 drag

1375 lb:

Pultaman = Pbasket nman_ult

 $P_{ult_man} = 1391 \, lbf$

Ultimate maneuvering load

after 30F 29 5/16 R

	Whasket = 45·lbf Wearea = 230·lbf	Weight of medium basket configuration -76401 (75.75" long) Weight of cargo (max)
	Phasket:= $W_{basket} + W_{cargo}$ $P_{basket} = 275 lbf$	Combined weight of basket and cargo
950 15 38 bays	$P_{lim_man} := P_{basket} \cdot n_{man}$ $P_{lim_man} = 963 \text{ lbf}$	Limit maneuvering load / + 320 drag
1425 15 57 bags	Pult_man = $P_{basket} \cdot n_{man_ult}$ $P_{ult_man} = 1444 lbf$	Ultimate maneuvering load 🗸
	Wbasket := 45·lbf Wcareo := 240·lbf	Weight of medium basket configuration -76401 (75.75" long) Weight of cargo (max)
	Phasket:= $W_{basket} + W_{cargo}$ $P_{basket} = 285 lbf$	Combined weight of basket and cargo
975 15 39 bags	$P_{lim_man} := P_{basket} \cdot n_{man}$ $P_{lim_man} = 998 \text{ lbf}$	Limit maneuvering load / 1 320 drag
(475 lb. 59 bags	Pult_man := $P_{basket} \cdot n_{man_ult}$ $P_{ult_man} = 1496 lbf$	Ultimate maneuvering load ✓
	Whasket = 45·lbf Weargo:= 250·lbf	Weight of medium basket configuration -76401 (75.75" long) Weight of cargo (max)
	Phasket:= $W_{basket} + W_{cargo}$ $P_{basket} = 295 lbf$	Combined weight of basket and cargo
1000 lb	Plim_man = $P_{basket} \cdot n_{man}$ $P_{lim_man} = 1033 lbf$	Limit maneuvering load V + 320 drag.
1525 lb 61 bays	Pult_man := $P_{basket} \cdot n_{man_ult}$ $P_{ult_man} = 1549 lbf$	Ultimate maneuvering load ✓
etter Utimate	30F 295/16 R	after 298/162 30 F

Long

AS350 Series and AS355 Series, FAR 27:

FAR 27.561(b)(3)

Ultimate Upward Emergency Landing Load Factor:

 $n_{e up} := 1.5$

Ultimate Forward Emergency Landing Load Factor:

 $n_{e \text{ fwd}} := 4.0$

Ultimate Sideward Emergency Landing Load Factor:

 $n_{e \text{ side}} := 2.0$

Ultimate Downward Emergency Landing Load Factor:

 $n_{e \text{ down}} := 4.0$

FAR 27.625

Fitting Factor (does not apply to articles being tested): $n_{\rm ff} := 1.15$

FAR 27.303

Safety Factor:

 $n_{sf} := 1.5$

FAR 27.337(a)

Limit Positive Maneuvering Load Factor:

 $n_{man} := 3.5$

 $n_{man ult} := n_{man} \cdot n_{sf}$

Ultimate Positive Maneuvering Load Factor:

 $n_{\text{man ult}} = 5.25$

Limit Negative Maneuvering Load Factor:

 $n_{\text{man neg}} := -1.0$

 $n_{\text{man}} = n_{\text{man}} = n_{\text{man}} \cdot n_{\text{sf}}$

Ultimate Negative Maneuvering Load Factor:

 $n_{\text{man neg u}} = -1.5$

CRITICAL ULTIMATE LOAD FACTORS:

Downward:

Ultimate Positive Maneuvering Load Factor:

 $n_{\text{man_ult}} = 5.25$

Forward:

Ultimate Forward Emergency Landing Load Factor:

 $n_{e \text{ fwd}} = 4$

Sideward:

Ultimate Sideward Emergency Landing Load Factor:

 $n_{e \text{ side}} = 2$

Upward:

Ultimate Upward Emergency Landing Load Factor:

 $n_{e up} = 1.5$

The basket is mounted below and to one side of the cabin. Forward deflection or failure in the emergency landing condition does not endanger the occupants. Likewise, Sideward and Upward deflection or failure of the basket in the emergency landing condition do not endanger the occupants.

Sideward and Upward Load Factors are used in the tests to ensure that the lid of the basket does not open in flight.

0 land 30 3/4 F 30 1/16 12

after 950 30 3/4 F 29 15/16 R w/scale hanging

after 1600 30 1/4 F 29 7/8

Quick Release Cargo Basket

$W_{basket} := 60 \cdot lbf$	W _{basket}	:=	60·lbf
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Weight of largest basket configuration -78402 (97" long)

$$W_{cargo} := 200 \cdot lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 260 \, lbf$$

Combined weight of basket and cargo

900 36 bays $P_{lim man} := P_{basket} \cdot n_{man}$

$$P_{lim\ man} = 910 \, lbf$$

Limit maneuvering load

1350 54 buys

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

$$P_{ult_man} = 1365 \, lbf$$

Ultimate maneuvering load

 $P_{lim\ cargo_neg} := W_{cargo} \cdot n_{man_neg}$

$$P_{lim_cargo_neg} = -200 lbf$$

Limit negative maneuvering load due to cargo

 $P_{ult \ cargo \ neg} := W_{cargo} \cdot n_{man \ neg \ u}$

$$P_{ult\ cargo\ neg} = -300 \, lbf$$

Ultimate negative maneuvering load due to cargo

Wcargo:= 210·lbf

Weight of cargo (max)

Phasket := Wbasket + Wcargo

$$P_{basket} = 270 \, lbf$$

Combined weight of basket and cargo

925 37 bags Plim man := Pbasket nman

$$P_{lim_man} = 945 lbf$$

Limit maneuvering load

1400

56 bags

Pult man = Pbasket nman_ult

$$P_{ult_man} = 1418 \, lbf$$

Ultimate maneuvering load

Wcargo:= 220·lbf

Weight of cargo (max)

Phasket:= Wbasket + Wcargo

$$P_{basket} = 280 \, lbf$$

Combined weight of basket and cargo

38 buys Plim_man = 980 lbf

Plimman:= Pbasket nman

$$P_{lim\ man} = 980 lbf$$

Limit maneuvering load

1456

58 bags

Pult man = Pbasket nman_ult

$$P_{ult_man} = 1470 \, lbf$$

Ultimate maneuvering load

. *	W _{cargo} := 230·lbf	Weight of cargo (max)
	Phasket:= $W_{basket} + W_{cargo}$ $P_{basket} = 290 lbf$	Combined weight of basket and cargo
1000 to bags	$P_{lim_man} := P_{basket} \cdot n_{man}$ $P_{lim_man} = 1015 lbf$	Limit maneuvering load 1 + 250 drag
(500 bo bags	Pult_man := $P_{basket} \cdot n_{man_ult}$ $P_{ult_man} = 1523 lbf$	Ultimate maneuvering load
	W _{cargo} := 240·lbf	Weight of cargo (max)
	Physics: $W_{basket} + W_{cargo}$ $P_{basket} = 300 lbf$	Combined weight of basket and cargo
1025 41 bags	$P_{lim_man} := P_{basket} \cdot n_{man}$ $P_{lim_man} = 1050 lbf$	Limit maneuvering load / 1280 drag
1550 62 bags	Pultaman: = $P_{basket} \cdot n_{man_ult}$ $P_{ult_man} = 1575 lbf$	Ultimate maneuvering load
	Weargon:= 250·lbf	Weight of cargo (max)
	Phasket:= $W_{basket} + W_{cargo}$ $P_{basket} = 310 lbf$	Combined weight of basket and cargo
(075 43 bags	$P_{lim_man} := P_{basket} \cdot n_{man}$ $P_{lim_man} = 1085 lbf$	Limit maneuvering load V + 290 dvag.
1600 64 bays	Pult_man = $P_{basket} \cdot n_{man_ult}$ $P_{ult_man} = 1628 lbf$	Ultimate maneuvering load

DRAG LOAD ON BASKET

$$\rho := 0.002378 \cdot \frac{slug}{ft^3}$$

Density of air at Sea Level.

$$V_{ne} := 155 \cdot knots$$

Never-Exceed-Speed of AS350B3.

$$V_d := \frac{V_{ne}}{0.9}$$

Design Dive Speed of AS350B3

$$V_d = 172 \text{ knots}$$

 $l_{basket} := 97 \cdot in$

Length of basket.

$$w_{basket} := 22.5 \cdot in$$

Width of basket

$$h_{basket} := 19.25 \cdot in$$

Height of basket.

$$A_f := 376 \cdot in^2$$

Frontal Area of basket.

$$A_p := 1_{basket} \cdot w_{basket}$$

$$A_p = 2183 \text{ in}^2$$

Planar Area of basket.

$$\frac{l_{basket}}{w_{basket}} = 4.3$$

Fineness ratio of basket

 $C_{Do} := 1.1$

Drag Coefficient of Basket, (overestimated) (Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

$$P_{drag} \coloneqq \frac{\rho}{2} \!\cdot\! V_d^{\ 2} \!\cdot\! A_f \!\cdot\! C_{Do}$$

$$P_{drag} = 289 \, lbf$$

Limit Drag on basket.

$$P_{drag_ult} := P_{drag} \cdot n_{sf}$$

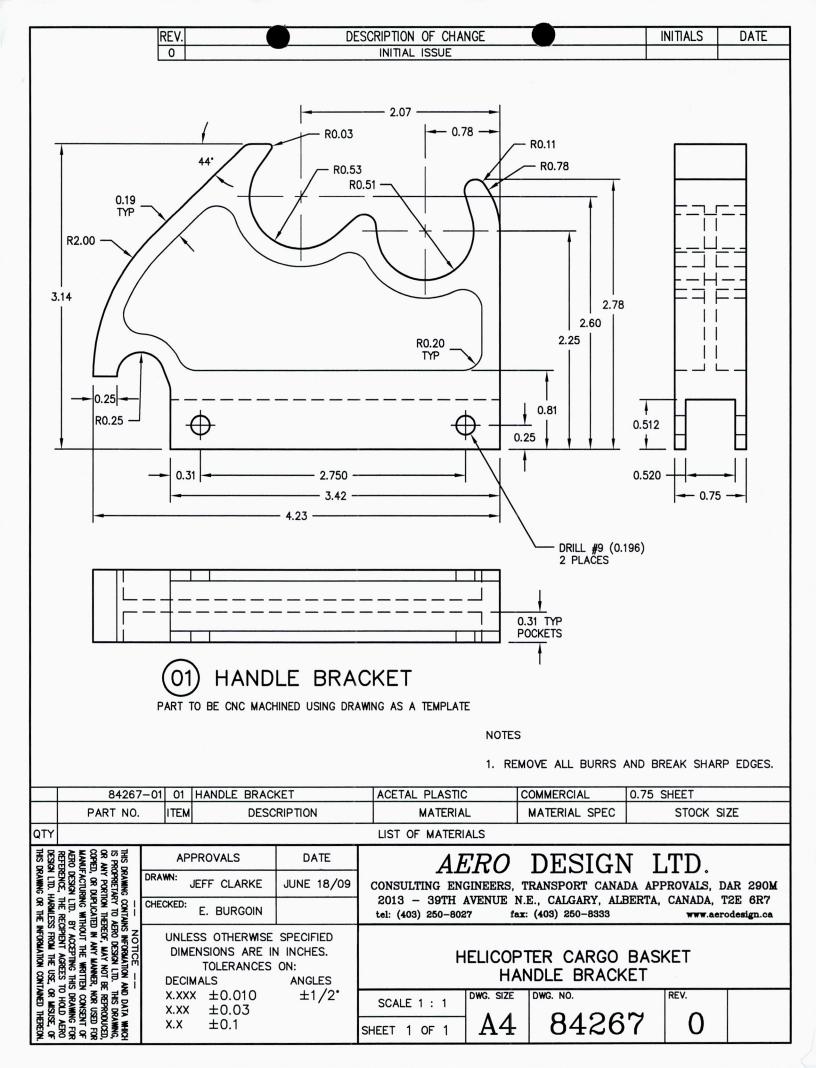
$$P_{drag_ult} = 433 \ lbf$$

Ultimate Drag load on basket

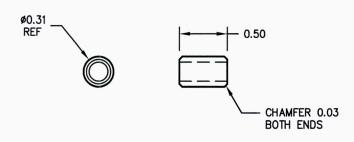
$$AC_{drag} := 48.4 \cdot in$$

Lateral Aerodynamic Center of basket.

(Low configuration)



REV.	DESCRIPTION OF CHANGE		INITIALS	DATE
0	INITIAL ISSUE			

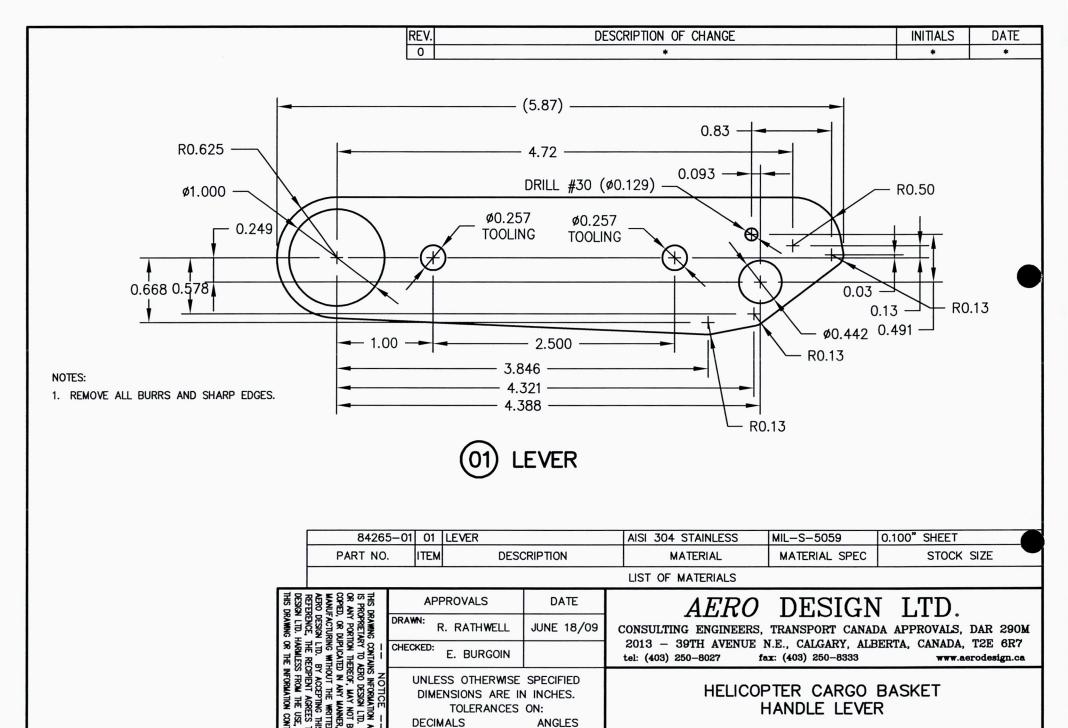


(01) BUSHING

NOTES

1. REMOVE ALL BURRS AND BREAK SHARP EDGES.

	84272	2-01 01 BUSHING			4130 STEEL, CO	ND. N	MIL-T-6736	0.313 X	0.058 R	ND. TUBE
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DWG. NO.

84265

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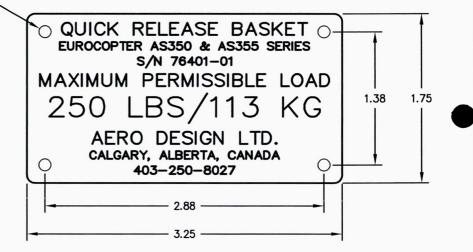
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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE		
1	INCREASE LOAD TO 250 LBS / 113 KG, ADD LEFT PLACARD (02)	BJC	JAN 27/10

DRILL #30 (0.129) 4 PLACES

NOTES

- 1. ENGRAVE 0.007 DEEP AS FOLLOWS:
 "QUICK RELEASE BASKET" 0.125 HIGH
 "EUROCOPTER AS350 & AS355 SERIES" 0.080 HIGH
 "S/N 76401—XX" 0.080 HIGH
 - "MAXIMUM PERMISSIBLE LOAD" 0.125 HIGH
 - "250 LBS/113 KG" 0.200 HIGH "AERO DESIGN LTD." 0.125 HIGH
 - "CALGARY, ALBERTA, CANADA" 0.080 HIGH
 - "403-250-8027" 0.080 HIGH
- 2. ON 76427-02: S/N IS 76402-XX.



O1 DI ACADO

(UI) PLACARD
(02) PLACARD

76427-02	02	PLACARD	6061-T6 ALUMINUM	QQ-A-250/11	0.063 SHEET
76427-01	01	PLACARD	6061-T6 ALUMINUM	QQ-A-250/11	0.063 SHEET
PART NO.	ITEM	DESCRIPTION	MATERIAL	MATERIAL SPEC	STOCK SIZE

LIST OF MATERIALS

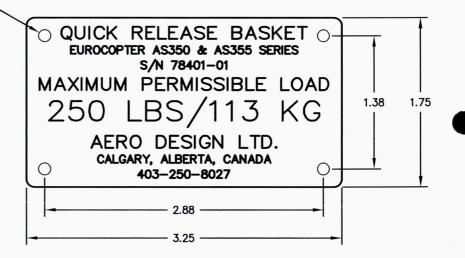
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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE		
1	INCREASE LOAD TO 250 LBS / 113 KG	BJC	JAN 27/10

DRILL #30 (0.129) -4 PLACES

NOTES

1. ENGRAVE 0.007 DEEP AS FOLLOWS:
"QUICK RELEASE BASKET" — 0.125 HIGH
"EUROCOPTER AS350 & AS355 SERIES" — 0.080 HIGH
"S/N 78401—XX" — 0.080 HIGH
"MAXIMUM PERMISSIBLE LOAD" — 0.125 HIGH
"250 LBS/113 KG" — 0.200 HIGH
"AERO DESIGN LTD." — 0.125 HIGH
"CALGARY, ALBERTA, CANADA" — 0.080 HIGH
"403—250—8027" — 0.080 HIGH



01) PLACARD

78427-01	01	PLACARD	6061-T6 ALUMINUM	QQ-A-250/11	0.063 SHEET	
PART NO.	TEM	DESCRIPTION	MATERIAL	MATERIAL SPEC	STOCK SIZE	

LIST OF MATERIALS

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Jeff Clarke

From: Jeff Clarke [jeff@aerodesign.ca]

Sent: February 2, 2010 11:54 AM

To: 'Staal, Jack'

Subject: C-10-0102 - AS350 Cargo Baskets

Jack,

Attached are the documents that require stamps for this revision: DCLs and FMS. The remainder of the documents will be uploaded into NDWL.

This revision changes the approval as follows:

1) Alternate short and long configurations are removed (Configuration C and F on the STC).

- 2) A mid height configuration is added (between the existing low and high configurations). This tucks the basket right under the cargo extenders (squirrel cheeks) while still being able to open the lid.
- 3) Optional lighter wall thickness for the beams, see ER764.04.
- 4) The cargo load in the medium and long baskets is increased to 250 lbs., see ER764.04. The short basket is already approved for 300 lbs cargo.
- 5) The handle configuration is changed.
- 6) Optional peg step welded to the mid and high beams.

On this issue of the STC the dates for the DCLs are all 01 February 2010, the ICA is 22 December 2009, and the FMS is 29 January 2010. There is a typo on the certificate – the FMS and ICA should be FMS764.91 and ICA764.90 (there is a "–" instead of "." on the certificate)

Please let me know if you have any questions.

Regards,

Jeff Clarke, CET

AERO Design Ltd. 2013 39th Avneue NE Calgary, Alberta, Canada T2E 6R7

Phone: 403.250.8027 Fax: 403.250.8333

Jeff Clarke

From: Jeff Clarke [jeff@aerodesign.ca]

Sent: February 2, 2010 3:03 PM

To: 'Staal, Jack'

Subject: C-10-0102 - AS350 Cargo Baskets

Jack,

I have uploaded the drawings, signed AE-100s, ICA, and Engineering Report into NDWL. I put the Engineering Report in the wrong section (AE-100).

Please let me know if you have any questions.

Regards,

Jeff Clarke

AERO Design Ltd.

fdf upload

DOCUMENT NO.	DOCU	IMENT CONTENT	REVISION	
INSTALLATION DOCUMENTS				
76401	Quick Release Car	go Basket Installation	2	
ICA764.90	Instructions for Cor	Instructions for Continued Airworthiness		
FMS764.91	Flight Manual Supp	lement	1	
FABRICATION DOCUMENTS				
DCL764-3	Document Control I	List - Basket Assembly	2	
ENGINEERING DOCUMENTS				
APPROVAL:	ORIGINAL DATE: 06 March 2008 REVISION DATE: 01 February 2010	AERO DESIGN LTD. 2013 – 39 th Ave NE, Calgary, Alberta, T2E 6R7 Ph. (403) 250-8027 Fax. (403) 250-8333		
	SHEET 1 OF 1	Eurocopter AS350 & AS355 Serie Quick Release Cargo Basket Installation		
	DCL764-1 2			

	DOCO	MENT CONTENT	REVISION		
INSTALLATION DOCUMENTS	4			puf	uple
FABRICATION DOCUMENTS 76410 76411 69812 76421 76422 76423 76427 69823 69824 49212 49213 49215 49216 84255 84261 84262 84265 84267 84272 36273 36274 36275 36277 36278 3628	Basket Assembly Basket Body Assem Lid Assembly Hoop Hoop Assembly Hoop Assembly Placard Lug Rim Rim Lid Brace Spacer Spacer Handle Assembly Handle Bar Assembly Handle Bracket Assemble Handle Bracket Bushing Lid Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly	oly	2 2 2 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0	<u> </u>	
ENGINEERING DOCUMENTS ER764.01 TP764.02 FTP764.03 ER764.04	Engineering Report Test Plan/Report Flight Test Plan/Rep Engineering Report	port	0 0 0 0	1./	V
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	SHEET 1 OF 1	Eurocopter AS350 & A Quick Release Carg Basket Assen	jo Basket		
	DC	L764-3	2		

DOCUMENT NO.	DOCU	REVISION			
INSTALLATION DOCUMENTS					
77601	Quick Release Carg	2			
ICA764.90	Instructions for Con	Instructions for Continued Airworthiness			
FMS764.91	Flight Manual Supp	ement	1		
FABRICATION DOCUMENTS					
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		Eurocopter AS350 & A	S355 Series		
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INSTALLATION DOCUMENTS 77610 77611 77612 76421 76421 76422 77627 69823 49215 49216 84255 84261	Basket Assembly Basket Body Assen Lid Assembly Hoop Hoop Assembly Placard Lug Spacer Spacer Handle Assembly Handle Bar Assembly	nbly	1 1 1 0 0 0 0 1 0 0	127
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	SHEET 1 OF 1	Eurocopter AS350 & A Quick Release Carg Basket Assem	o Basket	
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION	
INSTALLATION DOCUMENTS				
78401	Quick Release Carg	Quick Release Cargo Basket Installation		
ICA764.90	Instructions for Con	2		
FMS764.91	Flight Manual Supp	lement	1	
FABRICATION DOCUMENTS				
DCL784-3	Document Control L	ist - Basket Assembly	2	
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ENGINEERING DOCUMENTS				
ENGINEERING BOOGNENTS				
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	06 March 2008	AERO DESIGN 2013 - 39 th Ave NE, Calgary, Al	berta, T2E 6R7	
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		Eurocopter AS350 & A	S355 Series	
	SHEET 1 OF 1			
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION	
INSTALLATION DOCUMENTS FABRICATION DOCUMENTS 78410 78411 78412 76421 76422 76423 78427 69823 49215 49216 84255 84261 84262 84265 84267 84272 36273 36274 36275 36277 36278 36280	Basket Assembly Basket Body Assen Lid Assembly Hoop Hoop Assembly Placard Lug Spacer Spacer Handle Assembly Handle Bar Assembly Handle Bracket Ass Handle Lever Handle Bracket Bushing Lid Bracket Bushing Bushing Handle Bar Spring Brace Assembly	oly	1 2 1 0 0 1 1 1 1 0 0 0 0 0 0 0 0 0 1 2 3 3 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2) 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
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	SHEET 1 OF 1 Eurocopter AS350 & AS355 Series Quick Release Cargo Basket Basket Assembly			
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION	
INSTALLATION DOCUMENTS				
78601	Attachment Provision	Attachment Provisions Installation		
ICA764.90	Instructions for Con	Instructions for Continued Airworthiness		
FABRICATION DOCUMENTS		2		
DCL786-3	Document Control L	Document Control List - Provision Assembly		
ENGINEERING DOCUMENTS				
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	REVISION DATE: 01 February 2010	DI: (400) 050 0007		
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DOCUMENT NO.	DOCU	MENT CONTENT	REVISION	
INSTALLATION DOCUMENTS FABRICATION DOCUMENTS 78620 78630 78631 78632	Clamp Assembly Low Beam Fabricat High Beam Fabricat Mid Beam Fabricati	tion	2 2 3 1	
ENGINEERING DOCUMENTS ER764.01 TR764.02 FTP764.03 ER764.04	Engineering Report Load Test Plan/Rep Flight Test Plan/Rep Engineering Report	port port	0 0 0 0	
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	SHEET 1 OF 1	Eurocopter AS350 & AS355 Serion Basket Installation Provision Assembly		
	DCL786-3			

STATEMENT OF		E OF AIRC	ISPORT RAFT OR AIRCRAFT ESS REQUIREMENTS	AE-100 No.: Initial Issue Date: Revision: Revision Date:	2	5-3 rch, 2008 bruary 2010	
Aircraft Mfr: Eurocopter Aircraft Model: AS350 & AS355 Series Registration: ALL ELIGIBLE			Model / Type Airplane	Approval No.: Delegation No.: Delegate Name: Company:	: 290M : E. Burgoin		
		LI	ST OF APPROVED REPO	RTS AND DATA			
Document Number	Revision		Docum	ent Title		Compliance Status	
DCL786-3 2 Docume ER764.04 0 Enginee 78620 2 Clamp A 78630 2 Low Bea 78631 3 High Bea			ng Report	mbly fabrication Fabrication			
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Aircraft Model:	Eurocopter AS350 & AS3 ALL ELIGIBLI		Model / Type Airplane Helicopter Appliance Component	Approval No.: Delegation No.: Delegate Name: Company:	290M E. Bui AERO	
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Aircraft Mfr: Aircraft Model: Registration:	Eurocopter I: AS350 & AS355 Series ALL ELIGIBLE		Model / Type Airplane Helicopter Appliance Component	Approval No.: Delegation No.: Delegate Name: Company:	SH08- 290M E. Bur AERO	
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Aircraft Model:	craft Model: AS350 & AS355 Series		Model / Typ Airplane Helicopter Appliance Component	pe	Approval No.: Delegation No.: Delegate Name: Company:	SH08-16 290M E. Burgoin AERO Design Ltd.	
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Document Number	Revision			Docum	ent Title		Compliance Status
DCL784-1 78401	2 2	Document Control List and all documents referred to therein Quick Release Cargo Basket Installation		As per Compliance Program, CP764, Revision 0			
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AERO Design Ltd.

ENGINEERING REPORT ER764.04

EUROCOPTER AS350/AS355 SERIES

QUICK RELEASE MOUNTING PROVISIONS QUICK RELEASE CARGO BASKET

Prepared by: Jeff Clarke, CET

Approved by: E. Burgoin, P.Eng., DAR 290M

Revision 0, 22 January 2010

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1.0 INTRODUCTION

In the interest of maintaining a competitive advantage in the cargo basket market, the cargo basket installation is re-tested to increase the cargo capacity of the basket. Initial testing was conservative in order to prevent damage to the test article. The capacity is to be increased to 250 lbs, from 200, in the medium and long baskets. The short basket is already approved for 300 lbs.

Additionally, a new configuration for the mounting beams using a lighter wall tube to reduce the overall weight of the installation is tested. All holes, keyways, etc. are the same, the wall thickness is reduced to 0.065" from 0.120". Inserts are welded around the keyways to maintain the thickness required for the fitting, and to maintain wear properties at the keyway.

2.0 REFERENCE TEXT

AERO Design Ltd. Engineering Report ER764.01, TR764.02 AERO Design Ltd. Drawing 78631, 77610, 76410, 78411

3.0 BASIS OF CERTIFICATION

AS350 Series and AS355 Series: H-83/H-87

FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification).

This installation:

FAR 27, Amendment 27-20, plus select sections of later Amendments (AS355NP basis of certification).

4.0 APPLICABILITY OF AIRWORTHINESS DIRECTIVES

Airworthiness Directives applicable to the Eurocopter AS350 and AS355 Series were reviewed, and none were found to affect this project.

5.0 LOADS

AS350 Series and AS355 Series, FAR 27:

FAR 27.561(b)(3)

Ultimate Upward Emergency Landing Load Factor:

 $n_{e up} := 1.5$

Ultimate Forward Emergency Landing Load Factor:

 $n_{e \text{ fwd}} := 4.0$

Ultimate Sideward Emergency Landing Load Factor:

 $n_{e_side} := 2.0$

Ultimate Downward Emergency Landing Load Factor:

 $n_{e \text{ down}} := 4.0$

FAR 27.625

Fitting Factor (does not apply to articles being tested):

 $n_{ff} := 1.15$

FAR 27.303

Safety Factor:

 $n_{sf} := 1.5$

FAR 27.337(a)

Limit Positive Maneuvering Load Factor:

 $n_{man} := 3.5$

 $n_{man ult} := n_{man} \cdot n_{sf}$

Ultimate Positive Maneuvering Load Factor:

 $n_{\text{man_ult}} = 5.25$

Limit Negative Maneuvering Load Factor:

 $n_{\text{man neg}} := -1.0$

 $n_{\text{man_neg_u}} := n_{\text{man_neg}} \cdot n_{\text{sf}}$

Ultimate Negative Maneuvering Load Factor:

 $n_{\text{man neg u}} = -1.5$

CRITICAL ULTIMATE LOAD FACTORS:

Downward: Ultimate Positive Maneuvering Load Factor:

 $n_{man ult} = 5.25$

Forward:

Ultimate Forward Emergency Landing Load Factor:

 $n_{e \text{ fwd}} = 4$

Sideward:

Ultimate Sideward Emergency Landing Load Factor:

 $n_{e \text{ side}} = 2$

Upward:

Ultimate Upward Emergency Landing Load Factor:

 $n_{e up} = 1.5$

Note: The basket is mounted below and to one side of the cabin. Forward deflection or failure in the emergency landing condition does not endanger the occupants. Likewise, Sideward and Upward deflection or failure of the basket in the emergency landing condition do not endanger the occupants.

Sideward and Upward Load Factors are used in the tests to ensure that the lid of the basket does not open in flight.

5.1 Inertia Loads

Cargo loads are incremented by 10 lbs up to 250 lbs for the medium and long configurations.

5.1.1 Cargo Basket 77601 (Short Basket)

The inertia load for the short basket is highest, and will be used for testing of the light wall beams. The basket has already been demonstrated to carry 300 lbs cargo at ultimate load.

Weight of short basket configuration

$$W_{cargo} := 300 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 340lbf$$

Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1190lbf$$

Limit maneuvering load

$$P_{ult\ man} := P_{basket} \cdot n_{man\ ult}$$

$$P_{ult\ man} = 1785lbf$$

Ultimate maneuvering load

5.1.2 Cargo Basket 76401 (Medium Basket)

$$W_{basket} := 45 \cdot lbf$$

Weight of medium basket configuration

$$W_{cargo} := 200 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 245lbf$$

Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim_man} = 858lbf$$

Limit maneuvering load

$$P_{ult\ man} := P_{basket} \cdot n_{man\ ult}$$

$$P_{ult\ man} = 1286lbf$$

Ultimate maneuvering load

$W_{cargo} := 210 lbf$	Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

 $P_{basket} := W_{basket} + W_{cargo}$

$$P_{basket} = 255lbf$$
 Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim man} = 893 lbf$$
 Limit maneuvering load

$$\begin{aligned} P_{ult_man} &:= P_{basket} \cdot n_{man_ult} \\ P_{ult_man} &= 1339lbf \end{aligned} \qquad & \text{Ultimate maneuvering load}$$

$$W_{cargo} = 220 \, lbf$$
 Weight of cargo (max)

$$P_{basket} = 265lbf$$
 Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim_man} = 928lbf$$
 Limit maneuvering load

$$\begin{aligned} P_{ult_man} &:= P_{basket} \cdot n_{man_ult} \\ P_{ult_man} &= 1391lbf \end{aligned} \qquad & \text{Ultimate maneuvering load}$$

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 2751bf$$
 Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim_man} = 963lbf$$
 Limit maneuvering load

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1444lbf$$
 Ultimate maneuvering load

 $W_{cargo} := 240 \, lbf$

Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 285lbf$

Combined weight of basket and cargo

 $P_{lim_man} := P_{basket} \cdot n_{man}$

 $P_{lim\ man} = 998lbf$

Limit maneuvering load

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1496lbf$

Ultimate maneuvering load

 $W_{cargo} := 250 \, lbf$

Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 295lbf$

Combined weight of basket and cargo

 $P_{lim\ man} := P_{basket} \cdot n_{man}$

 $P_{lim\ man} = 1033lbf$

Limit maneuvering load

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1549lbf$

Ultimate maneuvering load

5.1.3 Cargo Basket 78401 (Long Basket)

 $W_{basket} := 60 \cdot lbf$

Weight of largest basket configuration

 $W_{cargo} := 200 \, lbf$

Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 260lbf$

Combined weight of basket and cargo

 $P_{lim_man} := P_{basket} \cdot n_{man}$

 $P_{lim_man} = 910lbf$

Limit maneuvering load

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1365lbf$

Ultimate maneuvering load

 $W_{cargo} = 210 \, lbf$ Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 2701bf$ Combined weight of basket and cargo

 $P_{lim\ man} := P_{basket} \cdot n_{man}$

 $P_{lim_man} = 945lbf$ Limit maneuvering load

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1418lbf$ Ultimate maneuvering load

 $W_{cargo} := 220 \, lbf$ Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 2801bf$ Combined weight of basket and cargo

 $P_{lim\ man} := P_{basket} \cdot n_{man}$

 $P_{lim\ man} = 980lbf$ Limit maneuvering load

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1470 lbf$ Ultimate maneuvering load

 $W_{cargo} := 230 \, lbf$ Weight of cargo (max)

 $P_{basket} := W_{basket} + W_{cargo}$

 $P_{basket} = 2901bf$ Combined weight of basket and cargo

 $P_{lim_man} := P_{basket} \cdot n_{man}$

 $P_{lim man} = 1015lbf$ Limit maneuvering load

 $P_{ult_man} := P_{basket} \cdot n_{man_ult}$

 $P_{ult\ man} = 1523lbf$ Ultimate maneuvering load

$$W_{cargo} := 240 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 300lbf$$

Combined weight of basket and cargo

$$P_{lim\ man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1050lbf$$

Limit maneuvering load

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1575lbf$$

Ultimate maneuvering load

$$W_{cargo} := 250 \, lbf$$

Weight of cargo (max)

$$P_{basket} := W_{basket} + W_{cargo}$$

$$P_{basket} = 310lbf$$

Combined weight of basket and cargo

$$P_{lim_man} := P_{basket} \cdot n_{man}$$

$$P_{lim\ man} = 1085lbf$$

Limit maneuvering load

$$P_{ult_man} := P_{basket} \cdot n_{man_ult}$$

$$P_{ult\ man} = 1628lbf$$

Ultimate maneuvering load

5.2 Drag Load

The drag on the large basket is critical. It is used for all tests.

$$\rho := 0.002378 \frac{\text{slug}}{\text{ft}^3}$$

Density of air at Sea Level.

 $V_{ne} := 155 \cdot knots$

Never-Exceed-Speed of AS350B3.

(Ref. AS350 TCDS)

(Highest of AS350/AS355 Series)

$$V_d := \frac{V_{ne}}{0.9}$$

$$V_d = 172 knots$$

Design Dive Speed of AS350B3

 $l_{basket} := 97 \cdot in$

Length of basket.

 $w_{basket} := 22.5 in$

Width of basket

 $h_{basket} := 19.25 in$

Height of basket.

 $A_f := 376 \text{ in}^2$

Frontal Area of basket.

 $A_p := l_{basket} \cdot w_{basket}$

 $A_p = 2183 in^2$

Planar Area of basket.

 $\frac{l_{\text{basket}}}{v} = 4.3$

Fineness ratio of basket

 $C_{Do} := 1.1$

Drag Coefficient of Basket, (overestimated) (Ref. Hoerner, Fluid Dynamic Drag, Figure 22).

$$P_{drag} := \frac{\rho}{2} \cdot V_d^2 \cdot A_f C_{Do}$$

 $P_{drag} = 289lbf$

Limt Drag on basket.

 $P_{drag_ult} := P_{drag} \cdot n_{sf}$

 $P_{drag\ ult} = 433lbf$

Ultimate Drag load on basket

 $AC_{drag} := 48.4 \text{ in}$

Lateral Aerodynamic Center of basket.

(Low configuration)

6.0 LOAD TEST

6.1 Test Setup

A scrap set of landing gear cross tubes and skid tube were setup as they would be installed on the helicopter. The free side of the cross tubes were clamped to a table to prevent tipping of the test setup under load. The attachment provisions were installed in accordance with drawing 78601, using light wall beams part number 78631-01-10.

The maneuvering load is applied by stacking bags of lead shot (25 lbs each) into a basket installed on the beams. The drag load is applied with a chain come-along attached to a load cell, pulling on the aft face of the basket.



Figure 6.1.1 - Test Setup

6.2 Beams Load Test

The high configuration is more critical than the mid or low configurations because the basket is attached above the attachments to the cross tubes. The load from a short basket with 300 lbs of cargo is used as this is the maximum load that can be applied from any basket configuration.

6.2.1 Limit Load

The limit loads on the short basket installation with 300 lbs of cargo are:

 $P_{lim\ man} = 1190 lbs.$

Limit Positive Maneuvering Load

 $P_{lim drag} = 289 lbs.$

Limit Drag Load

The basket was loaded with 1250 lbs of lead shot (50 bags), and pulled aft 300 lbs. The loads were removed and the beams checked for permanent deformation. There was no permanent deformation found.

6.2.2 Ultimate Load

The ultimate loads on the short basket installation with 300 lbs of cargo are:

 $P_{ult_man} = 1785 lbs.$

Ultimate Positive Maneuvering Load

 $P_{ult_drag} = 433 lbs.$

Ultimate Drag Load

The basket was loaded with 1775 lbs of lead shot (71 bags), and pulled aft 490 lbs. The basket applied 1g down (40 lbs) for a total down load of 1815 lbs. The load was applied for more than 3 seconds.

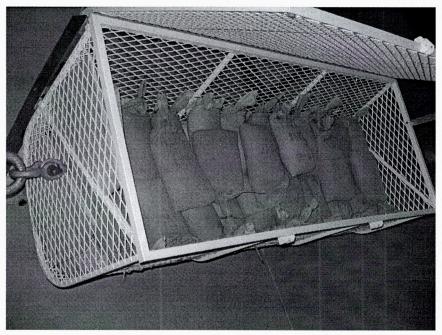


Figure 6.2.1 – Ultimate Maneuvering Load



Figure 6.2.2 – Ultimate Drag Load

The load was removed and the beams checked for permanent deformation and failure. There was slight deformation of both beams, about 1/32" on the forward beam and about 1/8" on the aft beam. The increased deformation of the aft beam may be due to a slight downward component from the drag load. The deformation is not excessive and does not prevent removal or installation of the basket. The light wall beams are sufficient for installation.

6.3 Medium Basket Load Test

Testing of the medium basket is to demonstrate that the basket is capable of supporting an increased cargo load. The basket was fabricated in accordance with drawings 76410, 76411, and 76412.

6.3.1 Limit Load

The limit maneuvering load and limit drag load must be carried without permanent deformation. The cargo load is incremented by 10 lbs up to 250 lbs. The existing approved configuration is 200 lbs of cargo.

$P_{lim_man} = 858 lbs.$	Limit Positive Maneuvering Load (200 lbs cargo)
$P_{lim_man} = 893 lbs.$	Limit Positive Maneuvering Load (210 lbs cargo)
P _{lim_man} = 928 lbs.	Limit Positive Maneuvering Load (220 lbs cargo)
$P_{lim_man} = 963 lbs.$	Limit Positive Maneuvering Load (230 lbs cargo)
P _{lim_man} = 998 lbs.	Limit Positive Maneuvering Load (240 lbs cargo)
$P_{lim_man} = 1033 lbs.$	Limit Positive Maneuvering Load (250 lbs cargo)

P_{lim drag} = 289 lbs. Limit Drag Load

The basket applies 1g down (45 lbs). The basket was loaded with 900 lbs of lead (945 lbs total) and pulled aft 300 lbs for more than 3 seconds (220 lbs cargo). The load was removed and the basket was checked for permanent deformation. There was no deformation found. The basket was then loaded with 1000 lbs of lead (1045 lbs total) and pulled aft 320 lbs (250 lbs cargo) for more than 3 seconds.

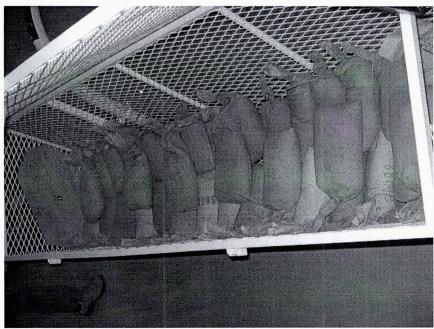


Figure 6.3.1 - Limit Maneuvering Load



Figure 6.3.2 - Limit Drag Load

The load was removed and the basket was checked for permanent deformation. There was no permanent deformation found. Testing continued to ultimate load.

6.3.2 Ultimate Load

The combined ultimate maneuvering load and ultimate drag load must be carried without failure.

$P_{ult_man} = 1286 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1339 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1391 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1444 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1496 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1549 lbs.$	Ultimate Positive Maneuvering Load

P_{ult_drag} = 433 lbs. Ultimate Drag Load

Since the load must be carried without failure, the load does not need to be removed after each increase. The load was applied for more than 3 seconds before continuing to the next increment. The basket was loaded with 1525 lbs of lead (1570 lbs total) and pulled aft 440 lbs for more than 3 seconds.

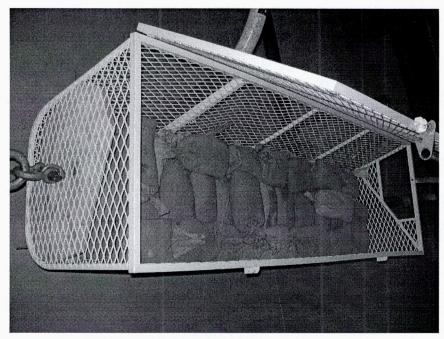


Figure 6.3.3 - Ultimate Maneuvering Load



Figure 6.3.4 – Ultimate Drag Load

The load was removed and the basket checked for deformation or failure. There was no permanent deformation found. The medium basket assembly 76410-01 is acceptable for an increase in cargo load to 250 lbs.

6.4 Long Basket Load Test

Testing of the long basket is to demonstrate that the basket is capable of supporting an increased cargo load. The basket was not a complete assembly, it was the body only, fabricated in accordance with drawing 78411.

6.4.1 Limit Load

The combined limit maneuvering load and limit drag load must be carried without permanent deformation. The cargo load is incremented by 10 lbs up to 250 lbs. The existing approved configuration is 200 lbs of cargo.

$P_{lim_man} = 910 lbs.$	Limit Positive Maneuvering Load (200 lbs cargo)
$P_{lim_man} = 945 lbs.$	Limit Positive Maneuvering Load (210 lbs cargo)
$P_{lim_man} = 980 lbs.$	Limit Positive Maneuvering Load (220 lbs cargo)
$P_{lim_man} = 1015 lbs.$	Limit Positive Maneuvering Load (230 lbs cargo)
$P_{lim_man} = 1050 lbs.$	Limit Positive Maneuvering Load (240 lbs cargo)
P_{lim_man} = 1085 lbs.	Limit Positive Maneuvering Load (250 lbs cargo)

 P_{lim_drag} = 289 lbs. Limit Drag Load

The basket applies 1g down (34 lbs). The basket was loaded with 950 lbs of lead (984 lbs total) and pulled aft 290 lbs for more than 3 seconds (220 lbs cargo).

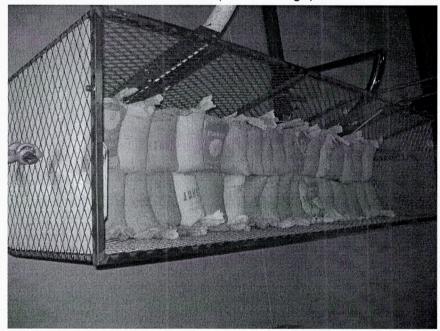


Figure 6.4.1 – Limit Maneuvering Load (950 lbs lead)

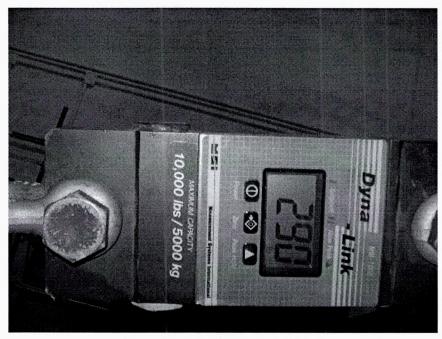


Figure 6.4.2 - Limit Drag Load

The load was removed and the basket was checked for permanent deformation. There was no deformation found. The basket was then loaded with 1075 lbs of lead (1109 lbs total) and pulled aft 290 lbs (250 lbs cargo) for more than 3 seconds.

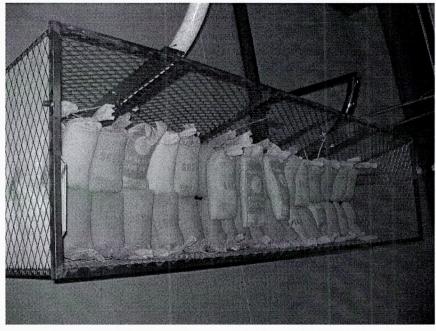


Figure 6.4.3 – Limit Maneuvering Load (1075 lbs lead)

AERO Design Ltd. ER764.04

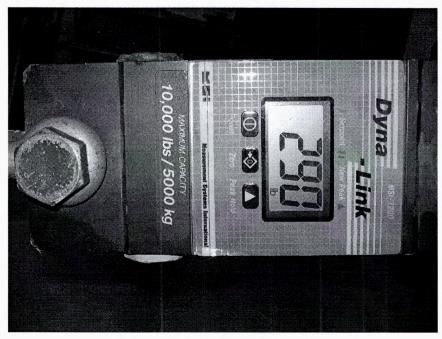


Figure 6.4.4 – Limit Drag Load

There was no failure under load. The load was removed and the basket checked for permanent deformation. There was no deformation found. Testing continued to ultimate load.

6.4.2 Ultimate Load

The combined ultimate maneuvering load and ultimate drag load must be carried without failure.

$P_{ult_man} = 1365 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1418 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1470 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1523 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1575 lbs.$	Ultimate Positive Maneuvering Load
$P_{ult_man} = 1628 lbs.$	Ultimate Positive Maneuvering Load

$$P_{ult_drag}$$
 = 433 lbs. Ultimate Drag Load

Since the load must be carried without failure, the load does not need to be removed after each increase. The load was applied for more than 3 seconds before continuing to the next increment. The basket was loaded with 1600 lbs of lead (1634 lbs total) and pulled aft 450 lbs for more than 3 seconds.

AERO Design Ltd. ER764.04

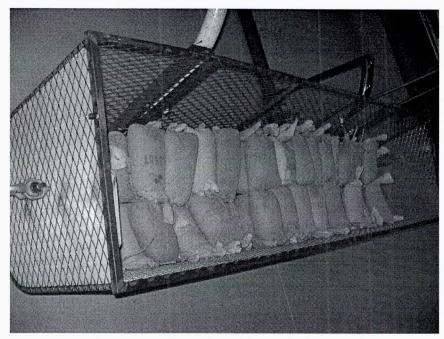


Figure 6.4.5 – Ultimate Maneuvering Load

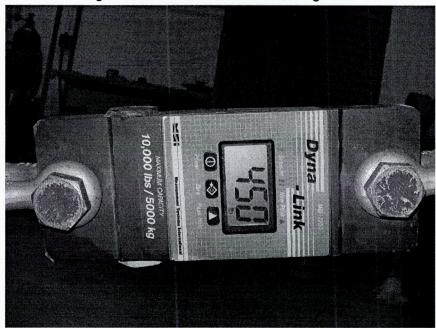
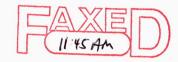


Figure 6.4.6 - Ultimate Drag Load

There was no failure under load. The load was removed and the basket was checked for permanent deformation or failure. There was slight deformation of the forward and aft ends of the basket. The deformation is not excessive and did not prevent removal or installation of the basket. The long basket assembly 78410-01 is acceptable for an increased cargo load to 250 lbs.

2013 - 39 Avenue N.E., Calgary, Alberta, T2E 6R7

Tel: 403-250-8027 Fax: 403-250-8333 www.aerodesign.ca



02 February 2010

Transport Canada Aircraft Certification Division 11th Floor, Canada Place 9700 Jasper Avenue Edmonton, Alberta T5J 4E6

Attn: Jack Staal

Your File: C-10-0102

Our File: 764

Re:

Eurocopter AS350 Cargo Baskets

Jack,

Please find attached the following documents related to this project:

Modification Approval Request Application Form

MOD764

Rev. 1

The documents related to this revision have been uploaded into NDWL for review.

Regards,

E. Burgoin, P.Eng, DAR 290M

Encl.

	MODIFICATION APPROV	AL R	EQUEST AP	PLICAT	ION FO	RM	MOD7	64, Rev. 1
1.	NAME AND ADDRESS OF APPLICANT: 2. IDENTIFICATION OF PRODUCT							
	AERO Design Ltd. 2013 - 39th Avenue NE	MAK	Œ:		MOI	DEL:		
	Calgary, Alberta T2E 6R7	E	urocopter			AS350 (all models) AS355 (all models)		
	ALL CORRESPONDANCE TO: AERO Design Ltd.	SER	RIAL No.:		REC	REGISTRATION:		
	2013 - 39th Avenue NE	A	ll eligible		A	II eligible		
	Calgary, Alberta T2E 6R7							
3.	REQUEST FOR:							
	A. SUPPLEMENTAL TYPE CERTIFICATE (STC)							
100	B. STC/STA REVISION	\boxtimes	STC/STA No. SI	H08-16	C-1	0-0/0	2	
	C. LIMITED SUPPLEMENTAL TYPE CERTIFICATE (LSTC)							
	D. LIMITED STC/STA REVISION		LSTC/LSTA No.					
	E. F.A.A. SUPPLEMENTAL TYPE CERTIFICATE							
7	F. F.A.A. STC REVISION		STC No.					
	G. FAMILIARIZATION OF F.A.A. STC		STC No.					
	H. REPAIR DESIGN APPROVAL (RDC)							
	I. PARTS DESIGN APPROVAL (PDA)							
4.	TITLE OF MODIFICATION OR REPAIR: Quick Release Cargo Basket Installation							
5.	BRIEF DESCRIPTION OF MODIFICATION OR REPAIR:							
	Installation of external attachment provisions; Installation of cargo	basket.						
6.	APPLICABLE TYPE APPROVAL (TA) OR TYPE CERTIFICATE	(TC) D	OCUMENTS:					
	A. TA NO. H-83/H-87 B. TC No.		C. OTHER					
7.	PROPOSED BASIS OF APPROVAL:							
	A. SAME AS TA □ B. SAME AS TC □	(C. OTHER	(Please s	specify)			
8.					JIRED	FOF	R DOT USE	ONLY
	DOCUMENTATION CHECKLIST						RECEIVE	D
				YES	NO	YES	NO	DATE
	COMPLIANCE PROGRAM				х			
	MASTER DRAWING LIST			х				
	FLIGHT MANUAL SUPPLEMENT			х				
	MAINTENANCE MANUAL SUPPLEMENT				х			
	INSTRUCTIONS FOR CONTINUING AIRWORTHINESS			х		No.		
	ENGINEERING REPORTS			х				
	DESIGN DRAWINGS				х			
	MANUFACTURE DRAWINGS & INSTALLATION INSTRUCTION	18		х				
	ELECTRICAL LOAD ANALYSIS				Х			
	DRAFT STC, LSTC OR RDA				Х			
	WEIGHT AND MOMENT CHANGE			х				
	FLIGHT TEST DATA				х			
	OTHER (Specify)							
9.	APPLICANT'S REMARKS:							
10.	In addition to the payment of Aircraft Certification approval fees as prescri incremental expenses as in Aviation Regulation Directive No. 3, or equiva	bed in Ca lent, as ap	nadian Aviation Regul oplicable. For further o	ations (CAR) details govern	Section 104, I ing cost recov	agree to rein ery, refer to a	mburse Trans AMA 513/4.	port Canada
	PER:	Co	nsultant				2 Februar	y, 2010
	SIGNATURE OF APPLICANTS	TITLE					DATE	
11.								
II								

AS350 & AS355 SERIES HELICOPTERS

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT for the

INSTALLATION of the AERO DESIGN QUICK RELEASE CARGO BASKET AND/OR QUICK RELEASE MAINTENANCE STEP

CARGO BASKET MODELS: 76401, 77601, 78401

TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Sections I, II, III and IV of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section I, Limitations, is mandatory. Section V and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the Eurocopter AS350 and AS355 Series Helicopters when fitted with the Quick Release Cargo Basket Installation and/or Quick Release Maintenance Step Installation. For limitations, procedures and performance not listed in this Flight Manual Supplement refer to the Approved Flight Manual and other approved Flight Manual Supplements.

Table of Contents

1	Limitations	3
П	Normal Procedures	3
Ш	Emergency Procedures	3
IV	Performance	3
V	Weight and Balance	4
VI	Installation / removal instructions	14

Record of Revisions

Revision	Issue Date	Pages Revised	Date Inserted	Ву
0	25 Feb, 2008	None		
1	29 Jan, 2010	All		
7				

I LIMITATIONS

- The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Models 764 and 784 is 250 lb. (113 kg). The maximum load in the AERO Design Ltd. Quick Release Cargo Basket Model 776 is 300 lb. (135.7 kg).
- Only one basket may be installed on the helicopter, on the right or left side.
- Flight operations limited to VFR conditions with AERO Design Ltd. Quick Release Cargo Basket installed.
- 4. V_{NE} is unchanged from the basic rotorcraft.
- 5. AS355NP only: For Category A operations, the basket must be removed. Mounting provisions may be left in place.

II NORMAL PROCEDURES

- 1. Pre-flight inspections:
 - Ensure that all cargo stored in the cargo basket is properly tied down and secured for flight.
 - b) Ensure that the lid of cargo basket is closed and secured.
 - Ensure the basket is locked in postion on the beams. Pull
 up on the forward and aft end of the basket to check.

CAUTION

It is possible to exceed the lateral centre of gravity limits of the rotorcraft under some loading conditions. Pilots must ensure that lateral C of G is within limits when loading the basket.

III EMERGENCY PROCEDURES

No change from basic Approved Flight Manual.

IV PERFORMANCE

- 1. Cruise performance and range will be reduced by approximately 8 percent with the Cargo Basket Installed.
- 2. AEO climb performance will be reduced by up to 150 fpm.

V WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 76401, 77601, and 78401. Each model has multiple configurations. Refer to the weight and balance information applicable to model and configuration installed.

Weight and balance is for Cargo Basket only. Mounting beams are not included since they should have been included in the basic rotorcraft weight and balance at time of initial installation.

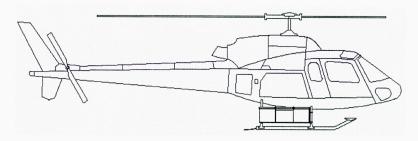
Longitudinal and Lateral moment arms for Cargo are given only for the center of the Cargo Basket. Due to the length of the basket, some loading arrangements may require that actual moment arms be measured, to determine the correct moments about the center of gravity.

CAUTION:

It is possible to exceed lateral CG limits in some configurations.

FMS764.91

 MODEL 77601 (Short Basket). The following weight and balance is for the cargo basket installed in accordance with drawing 77601.



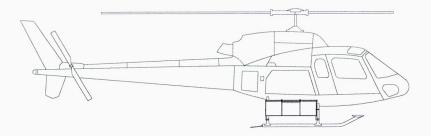
A) Configuration 77601-01 (Short Basket, Low mounted)

Standard

	Ottindard								
P/N	Description	Weight	Longitudinal		Lateral				
			arm	moment	arm	moment			
		lb	in	in-lb	in	in-lb			
77610-01	Basket (RH)	35.0	135.7	4749.5	48.1	1683.5			
	Maximum Cargo (RH)	300.0	135.7	40710.0	48.1	14430.0			
77610-01	Basket (LH)	35.0	135.7	4749.5	-48.1	-1683.5			
	Maximum Cargo (LH)	300.0	135.7	40710.0	-48.1	-14430.0			

Medic								
P/N	Description	Weight	Longitudinal		Lateral			
			arm	moment	arm	moment		
		kg	mm	mm-kg	mm	mm-kg		
77610-01	Basket (RH)	15.8	3446.8	54587.0	1221.7	19348.8		
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1221.7	165784.7		
77640.04	Desirat (LLI)	45.0	0.1.10.0	5.4507.0	1001 7			
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1221.7	-19348.8		
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1221.7	-165784.7		

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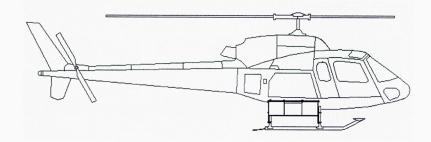
B) Configuration 77601-03 (Short Basket, Mid mounted)

Standard

Standard									
P/N	Description	Weight	Longitudinal		Lateral				
			arm	moment	arm	moment			
		lb	in	in-lb	in	in-lb			
77610-01	Basket (RH)	35.0	135.7	4749.5	46.5	1627.5			
	Maximum Cargo (RH)	300.0	135.7	40710.0	46.5	13950.0			
77610-01	Basket (LH)	35.0	135.7	4749.5	-46.5	-1627.5			
	Maximum Cargo (LH)	300.0	135.7	40710.0	-46.5	-13950.0			

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
77610-01	Basket (RH)	15.8	3446.8	54587.0	1181.1	18705.2
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1181.1	160275.3
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1181.1	-18705.2
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1181.1	-160275.3

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C) Configuration 77601-02 (Short Basket, High mounted)

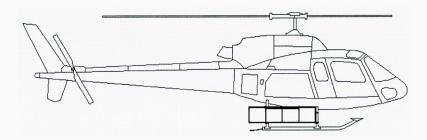
Standard

	Standard							
P/N	Description	Weight	Longitudinal		Lateral			
			arm	moment	arm	moment		
		lb	in	in-lb	in	in-lb		
77610-01	Basket (RH)	35.0	135.7	4749.5	45.6	1596.0		
	Maximum Cargo (RH)	300.0	135.7	40710.0	45.6	13680.0		
77610-01	Basket (LH)	35.0	135.7	4749.5	-45.6	-1596.0		
	Maximum Cargo (LH)	300.0	135.7	40710.0	-45.6	-13680.0		

	Wester								
P/N	Description	Weight	Longitudinal		Lateral				
			arm	moment	arm	moment			
		kg	mm	mm-kg	mm	mm-kg			
77610-01	Basket (RH)	15.8	3446.8	54587.0	1158.2	18343.2			
	Maximum Cargo (RH)	135.7	3446.8	467730.8	1158.2	157167.7			
77610-01	Basket (LH)	15.8	3446.8	54587.0	-1158.2	-18343.2			
	Maximum Cargo (LH)	135.7	3446.8	467730.8	-1158.2	-157167.7			

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2. **MODEL 76401 (Medium Basket)**. The following weight and balance is for the cargo basket installed in accordance with drawing 76401.



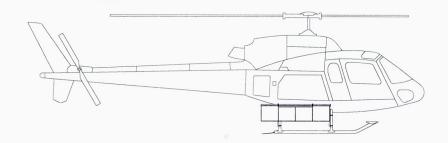
A) Configuration 76401-01 (Medium Basket, Low Mounted)

Standard

	Ctandara								
P/N	Description	Weight	Longitudinal		Lateral				
			arm	moment	arm	moment			
		lb	in	in-lb	in	in-lb			
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	48.6	2187.0			
	Maximum Cargo (RH)	250.0	144.9	36225.0	48.6	12150.0			
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-48.6	-2187.0			
	Maximum Cargo (LH)	250.0	144.9	36225.0	-48.6	-12150.0			

P/N	Description	Weight	Longitudinal		Longitudinal Lateral		teral
			arm	moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1234.4	25135.7	
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1234.4	139610.6	
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1234.4	-25135.7	
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1234.4	-139610.6	

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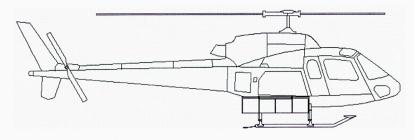
B) Configuration 76401-03 (Medium Basket, Mid Mounted)

Standard

P/N	Description	Weight	Long	itudinal	La	teral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	47.0	2115.0
	Maximum Cargo (RH)	250.0	144.9	36225.0	47.0	11750.0
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-47.0	-2115.0
	Maximum Cargo (LH)	250.0	144.9	36225.0	-47.0	-11750.0

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1193.8	24308.1
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1193.8	135018.8
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1193.8	-24308.1
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1193.8	-135018.8

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C) Configuration 76401-02 (Medium Basket, High Mounted)

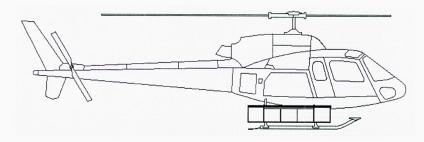
Standard

P/N	Description	Weight	Long	itudinal	La	teral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
76410- 01-01	Basket (RH)	45.0	144.9	6520.5	46.1	2074.5
	Maximum Cargo (RH)	250.0	144.9	36225.0	46.1	11525.0
76410- 01-02	Basket (LH)	45.0	144.9	6520.5	-46.1	-2074.5
	Maximum Cargo (LH)	250.0	144.9	36225.0	-46.3	-11525.0

P/N	Description	Weight	Long	itudinal	La	teral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
76410- 01-01	Basket (RH)	20.4	3680.5	74941.5	1170.9	23842.7
	Maximum Cargo (RH)	113.1	3680.5	416264.6	1170.9	132428.8
76410- 01-02	Basket (LH)	20.4	3680.5	74941.5	-1170.9	-23842.7
	Maximum Cargo (LH)	113.1	3680.5	416264.6	-1170.9	-132428.8

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 MODEL 78401 (Long Basket). The following weight and balance is for the cargo basket installed in accordance with drawing 78401.



A) Configuration 78401-01 (Long Basket, Low Mounted)

Standard

		Juliuai	<u>u</u>			
P/N	Description	Weight	Longi	itudinal	Lat	eral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78410-01	Basket (RH)	57.5	135.7	7802.8	48.4	2783.0
	Maximum Cargo (RH)	250.0	135.7	33925.0	48.4	12100.0
78410-01	Basket (LH)	57.5	135.7	7802.8	-48.4	-2783.0
	Maximum Cargo (LH)	250.0	135.7	33925.0	-48.4	-12100.0

					tion and the same of the same	
P/N	Description	Weight	Long	jitudinal	La	teral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78410-01	Basket (RH)	26.0	3446.8	89678.7	1229.4	31985.6
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1229.4	139045.1
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1229.4	-31985.6
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1229.4	-139045.1

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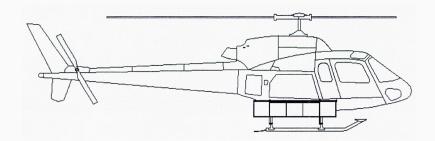
B) Configuration 78401-03 (Long Basket, Mid Mounted)

Standard

Otandard						
P/N	Description	Weight	Longi	itudinal	Lat	teral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78410-01	Basket (RH)	57.5	135.7	7802.8	47.0	2702.5
	Maximum Cargo (RH)	250.0	135.7	33925.0	47.0	11750.0
78410-01	Basket (LH)	57.5	135.7	7802.8	-47.0	-2702.5
	Maximum Cargo (LH)	250.0	135.7	33925.0	-47.0	-11750.0

WIECTIC						
P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78410-01	Basket (RH)	26.0	3446.8	89678.7	1193.8	31060.4
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1193.8	135018.8
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1193.8	-31060.4
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1193.8	-135018.8

FMS764.91



C) Configuration 78401-02 (Long Basket, High Mounted)

Standard

Ctandard						
P/N	Description	Weight	Longi	itudinal	La	teral
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
78410-01	Basket (RH)	57.5	135.7	7802.8	46.1	2650.8
	Maximum Cargo (RH)	250.0	135.7	33925.0	46.1	11525.0
78410-01	Basket (LH)	57.5	135.7	7802.8	-46.1	-2650.8
	Maximum Cargo (LH)	250.0	135.7	33925.0	-46.1	-11525.0

P/N	Description	Weight	Long	itudinal	La	teral
			arm	moment	arm	moment
		kg	mm	mm-kg	mm	mm-kg
78410-01	Basket (RH)	26.0	3446.8	89678.7	1170.9	30465.6
	Maximum Cargo (RH)	113.1	3446.8	311925.8	1170.9	132428.8
78410-01	Basket (LH)	26.0	3446.8	89678.7	-1170.9	-30465.6
	Maximum Cargo (LH)	113.1	3446.8	311925.8	-1170.9	-132428.8

VI INSTALLATION / REMOVAL INSTRUCTIONS

Cargo Baskets

The beams are installed in accordance with 78601. The basket is installed in accordance with drawing 76401, 77601 or 78401, as applicable. Removal of the basket leaving the beams in place is an approved configuration for flight. Logbook entry indicating installation or removal of basket and which weight and balance amendment is in effect is required when basket is installed or removed.

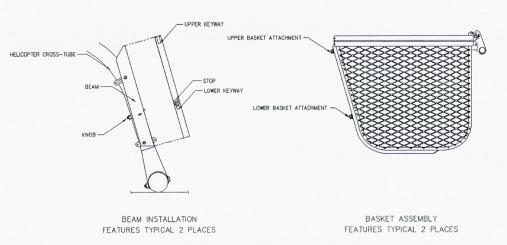


Figure 1 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical for low and high beam installations)

- 4. Installation Refer to Figure 1 and Figure 2.
 - a) Set basket upper attachment into upper keyway in forward and aft beams.
 - b) At forward attachment hoop, lift basket until lower attachment fitting hits stop.
 - c) Push fitting into keyway and slide basket down until locked.
 - d) Repeat step a,b and c for aft attachment hoop.

FMS764.91

- 2. Removal Refer to Figure 1 and Figure 2.
 - a) Pull knob at bottom end of forward beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
 - b) Pull knob at bottom end of aft beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
 - c) Lift basket until upper attachments are out of keyways on both beams and remove basket from helicopter.

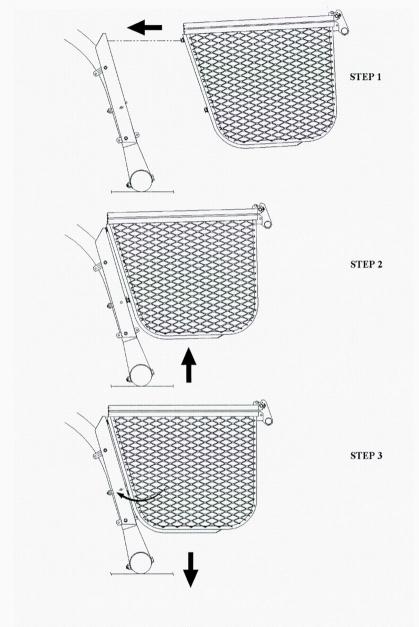


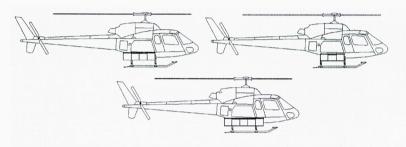
Figure 2 – Basket Attachment Steps (Low basket installation shown. Installation instructions typical for low and high basket installation).

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 764.90

EUROCOPTER AS350 & AS355 SERIES

QUICK RELEASE CARGO BASKET

MODELS: 764, 776 AND 784



TCCA Supplemental Type Certificate No. SH08-16 FAA Supplemental Type Certificate No. SR02680NY

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Cargo Basket installed in accordance with AERO Design Ltd. Document Control Lists:

- DCL764-1 (for Installation 76401), Revision 2,
- DCL776-1 (for Installation 77601), Revision 2,
- DCL784-1 (for Installation 78401), Revision 2,
- DCL786-1 (for mounting provision), Revision 2, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 2 Date: 22 December, 2009

<u>AERO Design Ltd.</u> Engineering Consultants 2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	Ву
0	25 February 2008		Original Issue
1	24 June, 2009		
2	22 December 2009		
	×		

LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue)	25 February, 2008
	Revision 1	24 June, 2009
	Revision 2	22 December, 2009

List of Effective Pages

<u>Description</u>	<u>Pages</u>	Revision No.
Cover	1	2
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00-00-00	4-5	0
04-00-00	6	1
05-00-00	7-10	1
11-00-00	11	2
25-50-00	12-22	2

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ICA 764.90

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CHAPTER 0 - INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Cargo Basket as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Cargo Basket. Requests for a copy may be made in writing to:

AERO Design Ltd. 2013 39th Avenue N.E. Calgary, Alberta T2E 6R7

Fax: 403-250-8333

Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

Revision 0

0-5 GENERAL DESCRIPTION

The cargo basket installation is a metal mesh basket installed to the side of the helicopter on beams attached to the landing gear cross tubes. The quick release basket allows for the installation and removal of the basket without tools, leaving the mounting beams in place.

The basket itself is made of a steel welded tubing structure, and lined with expanded steel mesh. The basket has a hinged lid with a self-locking handle.

The beams consist of a steel tube bolted to a clamp on the cross-tube. The quick release mechanism is built into the steel tube.

Revision 0 00-00-00

Page 5

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Quick Release Cargo Basket.

Revision 1 **04-00-00** Page 6

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Cargo Basket.

Daily Inspection

- 1. Inspection Area: Basket
 - a) Inspect the basket attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.
 - b) Inspect latching of the lid for correct operation. If basket is bent inward the lid will close but may not latch.

300 Hour or Annual Inspection

- 1. Inspection Area: Basket
 - a) Visually inspect tube-to-tube welds and mesh-to-tube welds for cracks, corrosion or other damage.
 - b) Visually inspect basket mesh for damage.
- 2. Inspection Area: Beams

With the basket removed:

- a) Visually inspect beams and clamps attaching basket to the helicopter for cracks, corrosion or other damage.
- b) Visually inspect lugs attaching the basket to the beams for security and damage.
- c) Visually inspect bolts attaching beams to clamps and clamps to cross tubes for condition and security.

Special Inspections

- 1. Following a hard landing inspect the Quick Release Cargo Basket installation in accordance with the 300 hour or annual inspection listed above.
- 2. Any joints using a helical thread insert (Helicoil) shall be inspected on assembly in accordance with the procedure for checking self locking nuts and screws specified in the Eurocopter Standard Practices Manual, Section 20.02.05.601

Revision 1 05-00-00

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Basket

- a) Repair Basket in accordance with AC43.13-1B, Chapter 4, Section 5, Welding, as required.
- b) Basket is fabricated from the following materials:

Attachment Hoops:

1" square steel tube and/or 1/2" square steel tube

Lid and Rim:

3/4" square steel tube

Frames:

1/2" square steel tube

Mesh:

3/4" 16 ga. (0.040") expanded steel mesh

c) Touch up with polyurethane paint as required following repairs.

2. Steel Beams

DO NOT REPAIR DAMAGE TO BEAMS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on the inboard face up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour.
- b) Nicks and/or gouges on the side and outboard faces up to 0.060" deep and 0.125" wide may be dressed out to a smooth contour.
- c) Critical keyway dimensions are shown in Figure 1. Attempt to insert 27/64 drill shank into bottom end of keyway. If drill can be inserted, slot is worn beyond limit.



Figure 5.1 – Keyway dimensions – typical for low and high beam assemblies

d) Touch up with polyurethane paint as required following repairs.

Revision 1 **05-00-00** Page 8

3. Aluminum Clamps

DO NOT REPAIR DAMAGE TO CLAMPS IF BEYOND THE LIMITS BELOW.

- a) Nicks and/or gouges on the top or bottom surface up to 0.060" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 2.
- b) Nicks and/or gouges on the outer edge up to 0.030" deep and 0.125" wide may be dressed out to a smooth contour. Refer to Figure 2.
- c) Any cracking on any surface is unacceptable.
- d) Touch up with polyurethane paint as required following repairs.

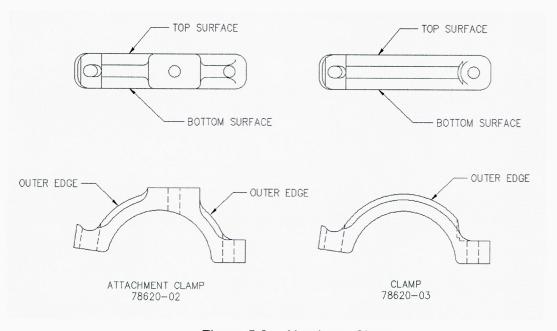


Figure 5.2 – Aluminum Clamps

4. Helical Thread Inserts

Helical thread inserts (Helicoils) found to be damaged shall be repaired in accordance with the Eurocopter Standard Practices Manual, Section 20.03.04.404.

Part numbers:

1/4-28 insert: 3591-4CN375

Revision 1 05-00-00

5-3 PROTECTIVE TREATMENT INFORMATION

1. Beams

The steel tubes are supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

2. Clamps

The aluminum clamps are supplied painted white. If the paint is damaged, touch up with white polyurethane paint.

3. Cargo Basket

The cargo basket is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

Revision 1 **05-00-00** Page 10

CHAPTER 11 – MARKINGS AND PLACARDS

The following markings and placards are used with the Quick Release Cargo Basket Installation in the locations noted:

a) Located on basket lid:



PLACARD FOR 77601 BASKET INSTALLATION



PLACARD FOR 76401 BASKET INSTALLATION



PLACARD FOR 78401 BASKET INSTALLATION

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

SECTION 50 - CARGO COMPARTMENTS

The Quick Release Cargo Basket Installation may be applied to the right or left side of the helicopter.

25-1 BEAMS INSTALLATION

Refer to Figure 25.1. Refer to section 25-5 for part numbers.

- 1. Attach two (2) Attachment Clamps (78620-02) to each Beam Assembly with two (2) AN4-14A Bolts and two (2) AN960-416 Washers. Do not tighten bolts.
- 2. Locate the Beam Assemblies onto the forward and aft skid gear cross-tubes on the helicopter as shown in drawing 78601.
- 3. Position two (2) Clamps (78620-03) onto the Attachment Clamps (78620-02) around cross tube. Fasten together using one AN4-14A Bolt, AN960-416 Washers and MS21044N4 Nut through one side of the Clamp Assembly and one FT4F-175H T-Bolt and BH00182A4 Self-Aligning Nut through the other side of the Clamp Assembly. Tighten bolts enough to prevent slippage on the tube while adjusting installation in step 4.

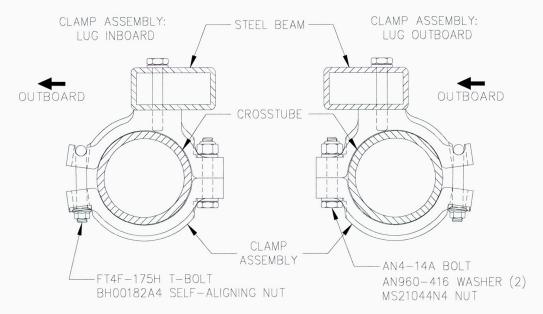


Figure 25.1 – Beam Installation – Clamp Detail Lug Inboard and Lug Outboard Installations Shown

4. In order to easily snap the basket in and out of the beams, the beams must be correctly aligned. The following procedures provide corrective actions for the conditions noted. Ensure beams are approximately parallel and aligned front to back before starting. For all procedures listed below, remove the basket before applying the correction and re-check after.

Revision 2 25-50-00

a. Beams too far apart (basket cannot be installed in top slots):

If the distance is less than 1/8": Rotate the forward beam slightly aft and/or the aft beam slightly forward until the basket can be set in the top slot of the beam.

If the distance is more than 1/8": Using 1/4" commercial stainless steel fender washers, shim the FORWARD beam by inserting the washer(s) between the beam and both clamps. Only use enough shims to allow basket to enter the TOP slot.

b. Beams too close together (basket cannot be installed in top slots):

If the distance is less than 1/8": Rotate the forward beam slightly forward and/or the aft beam slightly aft until the basket can be set in the top slot of the beam.

If the distance is more than 1/8": Using 1/4" commercial stainless steel fender washers, shim the AFT beam by inserting the washer(s) between the beam and both clamps. Only use enough shims to allow basket to enter the TOP slot.

c. Basket in top slots, resting with bottom fitting against beams, one fitting is away from the surface of the beam:

The beams are not parallel. Adjust the forward beam up or down the forward cross tube until both bottom fittings sit flat on the beams.

d. Basket in top slots, resting with bottom fittings against beams, both fittings do not line up with keyway (same direction):

The beams are not at the same height. Raise or lower the aft beam along the aft cross tube until the bottom fittings on the basket are aligned with both keyways.

e. Basket in top slots, resting with bottom fittings against beams, one fitting does not line up with keyway:

The landing gear cross tubes are not parallel. Using 1/2" commercial stainless steel fender washers, shim the top or bottom (as required) to align the bottom fitting on the basket with the keyway.

5. Bolts attaching beams to clamps (AN4-14A) that have been shimmed require longer bolts. There must be at least 0.38" of thread protruding with shims in place.

1 washer – AN4-14A bolt (no change)

2-3 washers - AN4-15A bolt

4-5 washers - AN4-16A bolt

Shimming in excess of 5 washers may indicate incorrect alignment in step 4. Confirm corrective actions taken, and if shims are still required, contact AERO Design Ltd. for further instructions.

6. Torque all 1/4" fasteners (12 places) to 50-70 inch-pounds. Note: A gap will remain on the side of the clamp assembly with the T-bolt as shown in Drawing 78601 and Figure 3.

Revision 2 25-50-00

25-2 BEAMS REMOVAL

Refer to Figure 25.1.

- 1. Remove Cargo Basket. Refer to section 25-4.
- 2. Remove fasteners securing clamp assemblies to the forward cross-tube. Remove Beam Assembly.
- 3. Remove fasteners securing clamp assemblies to the aft cross-tube. Remove Beam Assembly.

25-3 BASKET INSTALLATION

Refer to Figure 25.2 and Figure 25.3. Refer to section 25-5 for part numbers.

- 1. Set basket upper attachment into upper keyway in forward and aft beams.
- 2. At forward attachment hoop, lift basket until lower attachment fitting hits stop.
- 3. Push fitting into keyway and slide basket down until locked.
- 4. Repeat step 2 and Step 3 for aft attachment hoop.

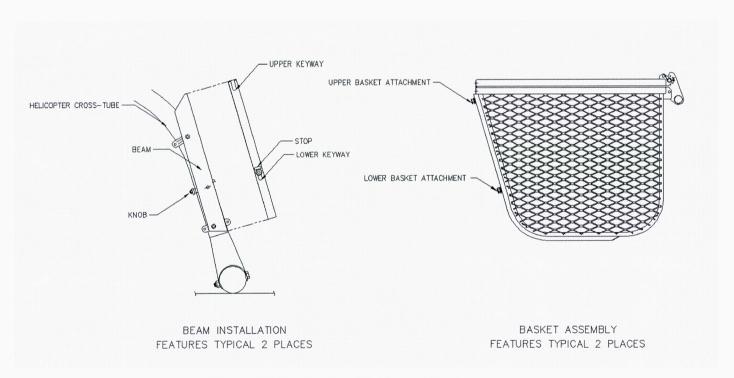


Figure 25.2 – Basket Attachment Features (Low beam installation shown. Beam attachment features typical.)

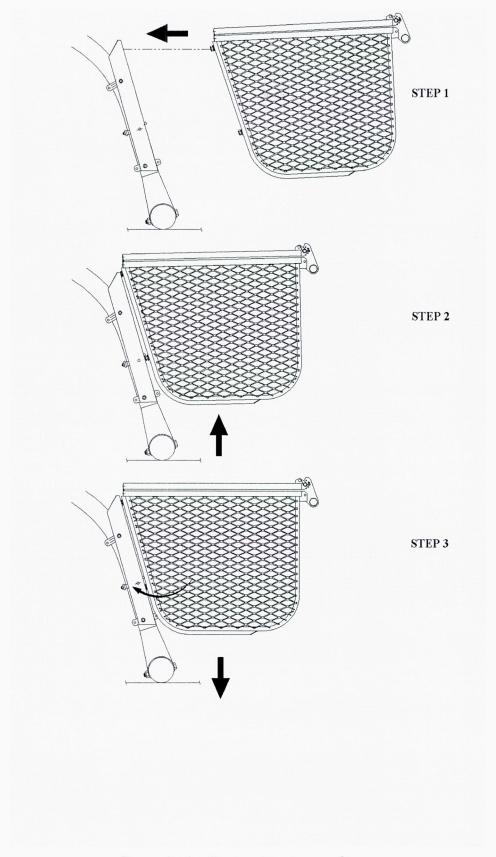


Figure 25.3 – Basket Attachment Steps

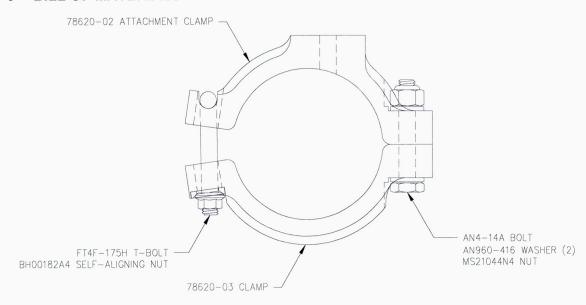
Revision 2

25-4 BASKET REMOVAL

Refer to Figure 4 and Figure 5.

- 1. Pull knob at bottom end of forward beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
- 2. Pull knob at bottom end of aft beam and lift basket until lower attachment fitting is free of keyway. Keep upper basket attachment in keyway on beam.
- 3. Lift basket until upper attachments are out of keyways on both beams and remove basket from helicopter.

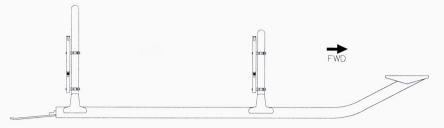
25-5 BILL OF MATERIALS



CLAMP ASSEMBLY

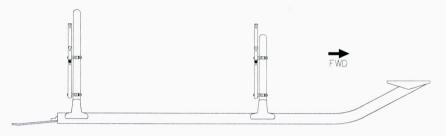
Qty.	Part Number	Description
1	78620-01	Clamp Assembly
. 1	78620-02	Attachment Clamp (with mounting pad)
. 1	78620-03	Clamp (no mounting pad)
. 1	AN4-14A	Bolt
. 2	AN960-416	Washer
. 1	MS21044N4	Nut
. 1	FT4F-175H	T-Bolt
. 1	BH00182A4	Self Aligning Nut

LOW PROVISIONS INSTALLATION



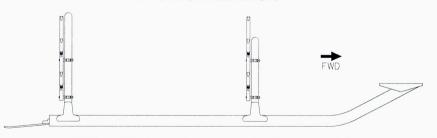
Qty.	Part Number	Description
1	78601-01-01	Low Provisions Installation- RH
1	78601-01-02	Low Provisions Installation- LH
. 4	78620-01	Clamp Assembly
. 2	78630-01	Low Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

MID PROVISIONS INSTALLATION



Qty.	Part Number	Description
1	78601-03-01	Mid Provisions Installation - RH
1	78601-03-02	Mid Provisions Installation - LH
. 4	78620-01	Clamp Assembly
. 2	78632-01	Mid Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

HIGH PROVISIONS INSTALLATION



Qty.	Part Number	Description
1	78601-02-01	High Provisions Installation - RH
1	78601-02-02	High Provisions Installation - LH
. 4	78620-01	Clamp Assembly
. 2	78631-01	High Beam Assembly
. 4	AN4-14A	Bolt
. 4	AN960-416	Washer
. A/R		Commercial Stainless Steel Fender Washer

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SHORT BASKET - MODEL 77601



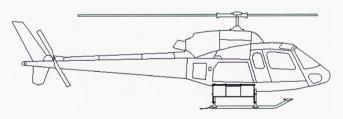
Quick Release Cargo Basket: Configuration 77601-01 (Short Basket, Low mounted)

Qty.	Part Number	Description
1	77601-01-01	Short Basket Installation (Low - RH)
. 1	78601-01-01	Low Provisions Installation (RH)
. 1	77610-01	Short Basket Assembly
1	77601-01-02	Short Basket Installation (Low - LH)
. 1	78601-01-02	Low Provisions Installation (LH)
. 1	77610-01	Short Basket Assembly



Quick Release Cargo Basket: Configuration 77601-03 (Short Basket, Mid mounted)

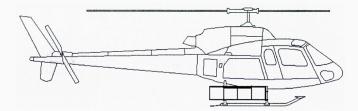
Qty.	Part Number	Description
1	77601-03-01	Short Basket Installation (Mid - RH)
. 1	78601-03-01	Mid Provisions Installation (RH)
. 1	77610-01	Short Basket Assembly
1	77601-03-02	Short Basket Installation (Mid - LH)
. 1	78601-03-02	Mid Provisions Installation (LH)
. 1	77610-01	Short Basket Assembly



Quick Release Cargo Basket: Configuration 77601-02 (Short Basket, High mounted)

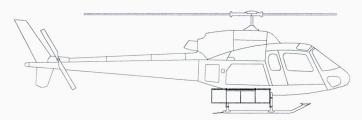
Qty.	Part Number	Description
1	77601-02-01	Short Basket Installation (High - RH)
. 1	78601-02-01	High Provisions Installation (RH)
. 1	77610-01	Short Basket Assembly
1	77601-02-02	Short Basket Installation (High - LH)
. 1	78601-02-02	High Provisions Installation (LH)
. 1	77610-01	Short Basket Assembly

MEDIUM BASKET - MODEL 76401



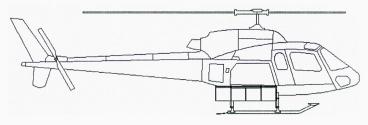
Quick Release Cargo Basket: Configuration 76401-01 (Medium Basket, Low Mounted)

Qty.	Part Number	Description
1	76401-01-01	Medium Basket Installation (Low - RH)
. 1	78601-01-01	Low Provisions Installation (RH)
. 1	76410-01-01	Medium Basket Assembly (RH)
1	76401-01-02	Medium Basket Installation (Low - LH)
. 1	78601-01-02	Low Provisions Installation (LH)
. 1	76410-01-02	Medium Basket Assembly (LH)



Quick Release Cargo Basket: Configuration 76401-03 (Medium Basket, Mid Mounted)

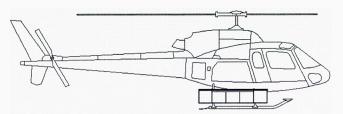
Qty.	Part Number	Description
1	76401-03-01	Medium Basket Installation (Mid - RH)
. 1	78601-03-01	Mid Provisions Installation (RH)
. 1	76410-01-01	Medium Basket Assembly (RH)
1	76401-03-02	Medium Basket Installation (Mid - LH)
. 1	78601-03-02	Mid Provisions Installation (LH)
. 1	76410-01-02	Medium Basket Assembly (LH)



Quick Release Cargo Basket: Configuration 76401-02 (Medium Basket, High Mounted)

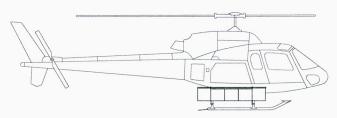
Qty.	Part Number	Description
1	76401-02-01	Medium Basket Installation (High - RH)
. 1	78601-02-01	High Provisions Installation (RH)
. 1	76410-01-01	Medium Basket Assembly (RH)
1	76401-02-02	Medium Basket Installation (High - LH)
. 1	78601-02-02	High Provisions Installation (LH)
. 1	76410-01-02	Medium Basket Assembly (LH)

LONG BASKET - MODEL 78401



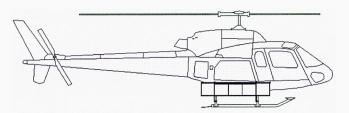
Quick Release Cargo Basket: Configuration 78401-01 (Long Basket, Low Mounted)

Qty.	Part Number	Description
1	78401-01-01	Long Basket Installation (Low - RH)
. 1	78601-01-01	Low Provisions Installation (RH)
. 1	78410-01	Long Basket Assembly
1	78401-01-02	Long Basket Installation (Low - LH)
. 1	78601-01-02	Low Provisions Installation (LH)
. 1	78410-01	Long Basket Assembly



Quick Release Cargo Basket: Configuration 78401-03 (Long Basket, Mid Mounted)

Qty.	Part Number	Description
1	78401-03-01	Long Basket Installation (Mid - RH)
. 1	78601-03-01	Mid Provisions Installation (RH)
. 1	78410-01	Long Basket Assembly
1	78401-03-02	Long Basket Installation (Mid - LH)
. 1	78601-03-02	Mid Provisions Installation (LH)
. 1	78410-01	Long Basket Assembly



Quick Release Cargo Basket: Configuration 78401-02 (Long Basket, High Mounted)

Qty.	Part Number	Description
1	78401-02-01	Long Basket Installation (High - RH)
. 1	78601-02-01	High Provisions Installation (RH)
. 1	78410-01	Long Basket Assembly
1	78401-02-02	Long Basket Installation (High - LH)
. 1	78601-02-02	High Provisions Installation (LH)
. 1	78410-01	Long Basket Assembly

25-6 WEIGHT AND BALANCE

This section contains weight and balance information for cargo basket models 764, 776 and 784. Each cargo basket model has multiple configurations. Refer to the weight and balance information applicable to basket model and configuration installed.

Determine which height (low, mid or high) and length (short, medium, or long) and locate on chart. If arm is required, divide the moment by the weight.

Lateral moment shown is for right side. Left side installation lateral moment is negative.

Two weight and balance configurations are required: Attachment Provisions only; and Basket Installed.

		Basket Configuration											
		Provisions Only			Short			Medium			Long		
Part No.			78601-XX		77601-XX			76401-XX			78401-XX		
			Longitudinal	Lateral		Longitudinal	Lateral		Longitudinal	Lateral		Longitudinal	Lateral
Mounting	Dash	weight	moment	moment	weight	moment	moment	weight	moment	moment	weight	moment	moment
Provisions	No.	lbs	in-lb	in-lb	lbs	in-lb	in-lb	lbs	in-lb	in-lb	lbs	in-lb	in-lb
Standard Wall													
Low	-01	6.4	866.8	241.0	41.4	5616.3	1924.5	51.4	7387.3	2428.0	63.9	8669.6	3024.0
Mid	-03	8.0	1083.9	298.2	43.0	5833.4	1925.7	53.0	7604.4	2413.2	65.5	8886.7	3000.7
High	-02	9.4	1273.9	346.0	44.4	6023.4	1942.0	54.4	7794.4	2420.5	66.9	9076.7	2996.8
Light Wall													
Low	-01	3.4	459.7	128.2	38.4	5209.2	1724.2	48.4	6980.2	2202.7	60.9	8262.5	2778.9
Mid	-03	4.0	541.1	149.4	39.0	5290.6	1745.4	49.0	7061.6	2223.9	61.5	8343.9	2800.2
High	-02	4.8	649.7	177.2	39.8	5399.2	1773.2	49.8	7170.2	2251.7	62.3	8452.4	2828.0

Table 25.1 – Weight and Balance (Standard Units)

						Basket Configuration							
		Provisions Only			Short			Medium			Long		
Part No.			78601-XX		77601-XX			76401-XX			78401-XX		
			Longitudinal	Lateral		Longitudinal	Lateral		Longitudinal	Lateral	,	Longitudinal	Lateral
Mounting	Dash	weight	moment	moment	weight	moment	moment	weight	moment	moment	weight	moment	moment
Provisions	No.	kg	mm-kg	mm-kg	kg	mm-kg	mm-kg	kg	mm-kg	mm-kg	kg	mm-kg	mm-kg
Standard Wall													
Low	-01	2.9	9962.3	2769.4	18.7	64549.3	22118.2	23.3	84903.8	27905.1	28.9	99641.0	34755.0
Mid	-03	3.6	12457.7	3427.7	19.5	67044.7	22132.9	24.0	87399.2	27735.9	29.6	102136.4	34488.1
High	-02	4.3	14641.2	3976.9	20.1	69228.2	22320.0	24.6	89582.7	27819.6	30.3	104319.9	3442.5
Light Wall													
Low	-01	1.5	5283.4	1473.0	17.4	59870.4	19816.1	21.9	80224.9	25315.6	27.6	94962.1	31938.6
Mid	-03	1.8	6219.2	1717.5	17.6	60806.2	20060.7	22.2	81160.7	25560.2	27.8	95797.9	32183.2
High	-02	2.2	7466.9	2036.6	18.0	62053.9	20379.8	22.5	82408.4	25879.3	28.2	97145.6	32502.2

Table 25.2 – Weight and Balance (Metric Units)

OPTIONS. The following weight and balance is for optional configurations.

Standard

P/N	Description	Weight	Lon	gitudinal	Lateral		
			arm	moment	arm	moment	
		lb	in	in-lb	in	in-lb	
70406-01	Front End Cutout	-0.3	107.5	-32.3	*	*	
70405-01	Lid Step (Short Basket)	4.0	135.7	542.8	*	*	
70405-01	Lid Step (Medium Basket)	5.8	144.9	840.4	*	*	
70405-01	Lid Step (Long Basket)	7.7	135.7	1044.9	*	*	

Metric

P/N	Description	Weight	Long	gitudinal	Lateral		
			arm	Moment	arm	moment	
		kg	mm	mm-kg	mm	mm-kg	
70406-01	Front End Cutout	-0.1	2730.5	-273.1	*	*	
70405-01	Lid Step (Short Basket)	1.8	3446.8	6204.2	*	*	
70405-01	Lid Step (Medium Basket)	2.6	3680.5	9569.3	*	*	
70405-01	Lid Step (Long Basket)	3.5	3446.8	12063.8	*	*	

^{*}Note: Lateral arm is the same as the basket configuration. Lateral moment is calculated with the lateral arm.

25-7 STRUCTURAL FASTENER DATA

Refer to Eurocopter Standard Practices Manual for torque values not listed in this ICA.